



# Red Hat Enterprise Linux 5 5.3 Release Notes

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Release Notes for all architectures.  
Edition 3

Ryan Lerch

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## Abstract

This document details the Release Notes for Red Hat Enterprise Linux 5.3.

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## 1. Release Notes Updates

This section contains information about Red Hat Enterprise Linux 5.3 that did not make it into the Release Notes included in the distribution.

### 1.1. Feature Updates

#### audit Update

The audit packages contain user-space utilities for storing and searching the audit records generated by the audit subsystem in the Linux 2.6 kernel.

These updated packages upgrade the auditd daemon and its utilities to the newer upstream version 1.7.7, which provides the following enhancements over the previous version:

- ▶ the auditctl program, which is used to control the behavior of the audit subsystem, now supports multiple keys in the audit rules.
- ▶ a new utility, ausyscall, which is used to cross-reference syscall name and number information, is now provided in these updated packages.
- ▶ the aureport program has been enhanced to provide reports about keys it sees in audit events.
- ▶ event log parsing for the ausearch and aureport programs has been improved.
- ▶ a sample STIG rules file, named "stig.rules", is newly provided in these updated packages. This file contains the auditctl rules which are loaded whenever the audit daemon is started by init scripts.

In addition to the listed enhancements, these updated audit packages also include a new feature to allow a server to aggregate the logs of remote systems. The following instructions can be followed to enable this feature:

1. The audispd-plugins package should be installed on all clients (but need not be installed on the server), and the parameters for "remote\_server" and "port" should be set in the /etc/audisp/audisp-remote.conf configuration file.
2. On the server, which aggregates the logs, the "tcp\_listen\_port" parameter in the /etc/audit/auditd.conf file must be set to the same port number as the clients.
3. Because the auditd daemon is protected by SELinux, semanage (the SELinux policy management tool) must also have the same port listed in its database. If the server and client machines had all been configured to use port 1000, for example, then running this command would accomplish this:

```
semanage port -a -t audit_port_t -p tcp 1000
```

4. The final step in configuring remote log aggregation is to edit the /etc/hosts.allow configuration file to inform tcp\_wrappers which machines or subnets the auditd daemon should allow connections from.

#### wpa\_supplicant re-base

wpa\_supplicant has been re-based to the latest upstream stable version 0.5.10 and include backported fixes for a number of issues that may affect users of wireless drivers that depend on the kernel's mac80211 wireless stack. Specific fixes and enhancements include:

- ▶ Support for a D-Bus control interface has been added. D-Bus is a popular lightweight Inter-Process Communication mechanism, and the addition of this control interface to

wpa\_supplicant allows applications (like NetworkManager) to more reliably control the supplicant.

- ▶ Cisco Aironet 340/350 wireless cards were not able to successfully connect to 802.1x-enabled wireless networks, often used in security sensitive organizations. During the connection process at the 4-Way WPA handshake stage, sending encryption keys to the driver would clear the wireless card firmware's authentication state. With this update, the supplicant uses an alternate method of supplying encryption keys to the kernel driver, allowing authentication state to be preserved in the Aironet firmware and 802.1x connections to succeed.
- ▶ Kernel drivers utilizing the new mac80211 wireless stack were sometimes unable to connect to wireless networks, either failing to find the requested network, or prematurely ending communication with the wireless access point during the connection process. Some drivers were prone to reporting multiple disconnection events during the association process, confusing the supplicant and causing long timeouts. The supplicant also did not sufficiently instruct the driver to disconnect when switching access points. This update fixes these issues and, in conjunction with kernel driver updates, allow more wireless hardware to successfully connect to wireless networks.

### **NetworkManager re-base**

**NetworkManager** has been updated to version 0.7.0. This update provides the following fixes and enhancements:

- ▶ NetworkManager would not display a LEAP password, even when the user selected the "show password" option. This has been fixed through a rebase to NetworkManager 0.7.
- ▶ During the beta phase, a version of NetworkManager was unable to automatically start network interfaces for which "ONBOOT=no" was present in the ifcfg file. NetworkManager now ignores this value unless "NM\_RESPECT\_ONBOOT=yes" is also present.
- ▶ a NetworkManager plug-in was named for its upstream repository. This could cause end-users to mistake the plug-in for an un-supported addition to Red Hat Enterprise Linux. This plug-in has been renamed to "ifcfg-rh".
- ▶ with this update, support has been added to NetworkManager for wired 802.1x authentication. However, after creating an 802.1x-enabled wired connection in the NetworkManager connection editor, it may be necessary to log out, then log back in before the connection can be used from the NetworkManager applet menu.
- ▶ NetworkManager attempted to set a hostname, but only after X had already done so. The user could not then open new windows because the authority files had been set by X with a different hostname. NetworkManager no longer sets hostnames.
- ▶ an update for NetworkManager that was available in the beta phase would change the run level enablement of the package during installation, and thus prevent NetworkManager from starting. NetworkManager no longer changes run level enablements during installation.
- ▶ on a system with more than one network adapter, network keys saved by the user while connecting with one adapter would not be available when the user attempted to connect with the other adapter. NetworkManager can now retrieve and use network keys saved for a different adapter on the same network.
- ▶ previously, NetworkManager would not always prompt the user for a new network key if the protocol or key of a wireless network changed. Although NetworkManager would wait for a new key, it would not always open a dialog box and allow the user to provide one. NetworkManager will now open a dialog box when needed.
- ▶ several bug fixes and enhancements for NetworkManager were available upstream. NetworkManager has been rebased to version 0.7 to incorporate these improvements,

including mobile broadband functionality, Phase2 WPA support, and static IP functionality.

- ▶ NetworkManager would cause a segmentation fault when resuming a session. This was caused by the HAL dropping privileges before connecting to D-Bus, meaning that the HAL could not send signals to NetworkManager. NetworkManager now explicitly permits signals from the HAL.
- ▶ sometimes, X would freeze if the NetworkManager menu and a keyring manager window were open at the same time. This updated package includes a patch from upstream that prevents this behavior.
- ▶ if NetworkManager requires a network key from the user, it will open a pop-up window. However, the applet previously could not steal focus from metacity and would remain in the background. The window was therefore not obvious to the user. The applet now opens in the foreground, alerting the user to take action.
- ▶ when resuming, NetworkManager could sometimes re-establish a wireless connection, but not a route. A fix for this problem from upstream has been included in this update.
- ▶ NetworkManager did not previously support Cisco Airo Wi-Fi cards, as these devices did not respond to NetworkManager's attempts to detect them. NetworkManager can now detect and use these cards.
- ▶ the NetworkManager applet would wake up and redraw its icon once per second, even when NetworkManager was not active. Now, the applet will not wake up unless NetworkManager is running.
- ▶ NetworkManager 0.7 connects faster than libnotify can provide a notification bubble. When this happens, the bubble will appear at the top left corner of the screen, rather than under the taskbar. NetworkManager notification bubbles are now delayed for a few seconds, allowing libnotify to react.

### dbus-glib re-base

The dbus-glib integration library has been re-based to version 0.73.8 This update provides support to updated versions of NetworkManager and also implements the following bugfix and enhancements

- ▶ cleanup of the DBusGProxy objects treated pending remote method calls incorrectly and may have resulted in freeing invalid memory. Consequently, processes using DBusGProxy objects may have crashed when the DBusGProxy object was freed. With this update dbus-glib correctly handles the destruction of DBusGProxy objects, resolving this issue.
- ▶ two new function calls, **dbus\_g\_proxy\_call\_with\_timeout** and **dbus\_g\_proxy\_begin\_call\_with\_timeout**, have been added to dbus-glib providing the ability to specify a timeout when making a request to a remote service.
- ▶ dbus-binding-tool now ignores namespaced Extensible Markup Language (XML) nodes when processing introspection definition files.

### sudo Re-base

**sudo** has been re-based to upstream version 1.6.9. This version of sudo now supports LDAP, and allows sub-tree searching instead of just base searching (i.e. tree-level only) for **sudo** rights. This allows administrators to categorize **sudo** rights in a tree, making user privileges easier to manage.



**Note**

the **env\_reset** sudoers option from newer sudo will reset the PATH environment variable. This is different from the behaviour in sudo-1.9.8. To keep the old behaviour simply add PATH variable into env\_keep in **sudoers** file.

**LVM-based Cluster mirroring**

With this update, the ability to create LVM mirrors in a cluster environment (i.e. while using CLVM) is now available in Red Hat Enterprise Linux. It provides for simultaneous access from multiple cluster machines, like when using a cluster-aware file system. This solution is compatible with existing single-machine mirrors. When switching a mirrored logical volume between single-machine and cluster-aware, no resynchronization is necessary.

**1.2. Resolved Issues**

- ▶ **system-config-network** requires the fonts provided with **xorg-x11-fonts-Type1** in order to display. However, this fonts package was not previously set as a dependency for **system-config-network** and it was therefore possible (for example, in the case of a minimal installation) for **system-config-network** to be present on a system and yet unable to function because these fonts were missing. This update sets **xorg-x11-fonts-Type1** as a dependency for **system-config-network** to ensure that these fonts will be available and that **system-config-network** will display correctly.
- ▶ In Red Hat Enterprise Linux 5.2, a 64-bit version of **httpd** was included in addition to the existing 32-bit **httpd** in the PowerPC architecture. If a user installed both versions, an **httpd** conflict would occur, preventing **httpd** from functioning properly.  
To resolve this issue, the 64-bit version of **httpd** has been removed from this release. Any systems with the previous 64-bit version of **httpd** installed should remove the package before upgrade.

**1.3. Driver Updates**

- ▶ the SCSI device handler infrastructure (**scsi\_dh**) has been updated, providing added support for LSI RDAC SCSI based storage devices.
- ▶ the tg3 driver for Broadcom Tigon3 ethernet devices has been updated to version 3.93. This applies several upstream changes for new hardware. However, the 5785 hardware is not fully supported. This device may be detected by the driver, but lack of PHY support may cause these chips to not function correctly and may require the user disable any on-board 5785 cards in the system BIOS.
- ▶ **scsi-target-utils** now features *iSCSI Extensions for RDMA* (iSER), which is based on the Linux Target (tgt) framework. iSER is included in this release as a Technology Preview, and provides capabilities for both single and multiple portals on different subnets. Note, however, that there are known bugs with using multiple portals on the same subnet.  
To set up an iSER target component, install the **scsi-target-utils** and **libibverbs-devel** packages. The corresponding library package for your system's Infiniband hardware is also required. For example, in HCAs that use the **cxgb3** driver the **libcxgb3** package is needed, and for HCAs using the **mttha** driver the **libmttha** package is needed.
- ▶ The MPT Fusion driver has been updated to version 3.04.06, providing the following bugfixes and enhancements:
  - Previously, the MPT Fusion driver always allocated I/O resources, even if they were not required,

which may have caused issues in low resource environments. With this update, the driver now uses the `pci_enable_device_mem` and `pci_enable_device` functions to differentiate the resource allocations.

- Previously, the kernel would panic when the `mptsas` and `mptctl` modules were loaded in parallel. With this update, this issue has been resolved.
- Previously, system power state changes (such as hibernation and standby) were not functioning correctly with 106XE controllers. With this update, the driver has been modified to free and allocate resources in power management entry points.

## 1.4. Virtualization

- ▶ A bug in the IDE/ATA driver stack that could prevent a system using **kernel-xen** from booting into the **kdump** environment is now fixed. In previous releases, this occurred if the system encountered a kernel panic while an IDE device was performing I/O and the IDE device was being controlled by a device driver other than **libata**.
- ▶ A softlockup may have occurred when creating a guest with a large amount of memory. Consequently, a call trace of the error was displayed on both the dom0 and the other guest. In this update, this issue has been resolved.
- ▶ On systems with large amounts of memory (ie 256GB or more), setting up the dom0 could exhaust the hypervisor memory heap. To work around this, the `xenheap` and `dom0_size` command line arguments had to be set to valid values for the system. In this update, the hypervisor has been updated to automatically set these values to a default of 32GB, which resolves this issue.
- ▶ Due to technical problems with passing TX checksum offload information between paravirtual domains, the use of TX checksum offload in conjunction with NAT for traffic originating from another domain is not supported. TX checksum offload can be used together with NAT as long as the NAT rule is applied in the domain where the traffic originates.

Note that this also applies to fully virtualised domains using paravirtual network drivers. Fully virtualised domains using fully virtualised drivers are not affected as they do not support TX checksum offload at all.

## 1.5. Known Issues

- ▶ Previous versions of the 5.3 Release Notes stated that the CD-ROM/DVD-ROM unit on *Dell PowerEdge R905* servers does not work with Red Hat Enterprise Linux 5. This note was included by error, and does not apply to Red Hat Enterprise Linux 5.3.
- ▶ **kdump** now serializes drive creation registration with the rest of the **kdump** process. Consequently, **kdump** may hang waiting for IDE drives to be initialized. In these cases, it is recommended that IDE disks not be used with **kdump**.
- ▶ Improvements have been made to the 'nv' driver, enhancing suspend and resume support on some systems equipped with nVidia GeForce 8000 and 9000 series devices. Due to technical limitations, this will not enable suspend/resume on all hardware.
- ▶ **pirut** sorts some package lists using the textual representation of a package, which is inconsistent with the textual representation method used in **yum**. As such, some package lists (e.g. **Optional Packages** list) in **pirut** may not display names in alphabetical order.
- ▶ The Hypervisor outputs messages regarding attempts by any guest to write to an MSR. Such messages contain the statement **Domain attempted WRMSR**. These messages can be safely ignored; furthermore, they are rate limited and should pose no performance risk.
- ▶ When upgrading from Red Hat Enterprise Linux 4 Workstation to 5 Server, **OpenOffice** will no longer work correctly with SELinux. This is because the Red Hat Enterprise Linux version of **OpenOffice** is built using an incorrect library. As a result, SELinux will prevent **OpenOffice** from accessing any shared libraries, causing **OpenOffice** to fail.

To work around this, update the SELinux context to allow **OpenOffice** to access shared libraries. To do so, run the following commands:

```
semanage fcontext -a -t textrel_shlib_t '/usr/lib/ooo-1.1(/.*)?'
semanage fcontext -a -t textrel_shlib_t '/usr/lib64/ooo-1.1(/.*)?'
restorecon -Rv /usr/lib/ooo-1.19
restorecon -Rv /usr/lib64/ooo-1.19
```

Alternatively, you can also upgrade your **OpenOffice** to a correct version compatible with SELinux in Red Hat Enterprise Linux 5. You can do this by subscribing to the "Productivity App" child channel in Red Hat Network and running the following command:

```
yum install openoffice-
{base,calc,draw,emailmerge,graphicfilter,headless,impress,javafilter,mat
h,pyuno,writer,xsltfilter}
```

- ▶ If jumbo frames are enabled on your system, a kernel panic will occur if you attempt to unload the **bnx2** module.
- ▶ Red Hat advises that you avoid removing a block device from a guest while the device is in use. Doing so causes Xend to lose domain information for the guest.
- ▶ Accessing the right-click menu of the **NetworkManager** GNOME applet may cause the GNOME **Keyring Unlock** dialog to appear. When this occurs, no X11 applications can receive keyboard or mouse input.

To recover from this, switch to a virtual terminal using **Ctrl+Alt+F1**. Log in as the affected user (or root) and run **killall -9 nm-applet**. Then, switch back to X11 using **Ctrl+Alt+F7**. Your system should be able to receive keyboard and mouse input, although Red Hat recommends that you logout and login again to allow the system to fully recover.

- ▶ On Altix systems with an ATI FireMV graphics adapter, the GUI console may not display on one of the VGA connectors. To workaround this issue, switch to using the other VGA connector on the dongle.
- ▶ It has been determined that 1024 byte objects in kernel slab may be lost when a call to pipe() fails. The problem occurs because pipe() allocates pipe files, and then tries to get free file descriptors for them. If the process is out of file descriptors, pipe() fails, but it does not clean up properly. A fix for this problem is planned for a forthcoming 5.3 kernel update.

To workaround this issue, ensure that the process calling do\_pipe has adequate file descriptors allocated.

This issue has been observed with **multipathd** in particular. To avoid the problem with **multipathd**, calculate the number of file descriptors (FDs) required using the formula: "FDs = Number of Paths + 32". If the result is greater than the default value of 1024, then the max\_fds value in the defaults section of multipath.conf should be set to the previously calculated value. For example, if there are 255 LUNs with 8 paths each, the line to be added to the defaults section of multipath.conf would be:

```
max_fds 2072
```

- ▶ The **libcpiutil-devel** package depends on **tog-pegasus-devel**, which for the Red Hat Enterprise Linux Desktop product is only available from the Workstation option. Therefore, any attempt to install the **libcpiutil-devel** package on a system that does not have a Subscription including the Workstation option or is not subscribed to the Workstation channel on the Red Hat Network, will fail with an unresolved dependency error.
- ▶ It is possible in rare circumstances, for **makedumpfile** to produce erroneous results but not have them reported. This is due to the fact that **makedumpfile** processes its output data through a pipeline consisting of several stages. If **makedumpfile** fails, the other stages will still succeed, effectively masking the failure. Should a vmcore appear corrupt, and makedumpfile is in use, it is recommended that the core be recorded without makedumpfile and a bug be reported.

- An issue may be encountered when using **system-config-cluster** to configure a Postgres 8 resource agent, resulting in the postgresql service failing to start. To include a Postgres resource agent in your cluster, please check the man page for the agent, and edit the **cluster.conf** file in an editor, then update the cluster with the new configuration file using the appropriate **cman\_tool** command.
- Due to outstanding driver issues with hardware encryption acceleration, users of Intel WiFi Link 4965, 5100, 5150, 5300, and 5350 wireless cards are advised to disable hardware accelerated encryption using module parameters. Failure to do so may result in the inability to connect to Wired Equivalent Privacy (WEP) protected wireless networks after connecting to WiFi Protected Access (WPA) protected wireless networks.

To do so, add the following options to **/etc/modprobe.conf**:

```
alias wlan0 iwlagm
options iwlagm swcrypto50=1 swcrypto=1
```

(where wlan0 is the default interface name of the first Intel WiFi Link device)

- kdump now restarts when CPUs or DIMMs are hot-added to a system. If multiple items are added at the same time, several sequential restarts may be encountered. This behavior is intentional, as it minimizes the time-frame where a crash may occur while memory or processors are not being tracked by kdump.

## 1.6. Technology Previews

### Software based Fibre Channel over Ethernet (FCoE)

The Fibre Channel over Ethernet (FCoE) driver (fcoe.ko), along with libfc, provides the ability to run FCoE over a standard Ethernet card. This capability is provided as a technical preview in Red Hat Enterprise Linux 5.3.

To enable this feature, you must login by writing the network interface name to the **/sys/module/fcoe/parameters/create** file, for example:

```
echo eth6 > /sys/module/fcoe/parameters/create
```

To logout, write the network interface name to the **/sys/module/fcoe/parameters/destroy** file, for example:

```
echo eth6 > /sys/module/fcoe/parameters/destroy
```

For further information on software based FCoE refer to: [http://www.open-fcoe.org/openfc/wiki/index.php/FCoE\\_Initiator\\_Quickstart](http://www.open-fcoe.org/openfc/wiki/index.php/FCoE_Initiator_Quickstart).

Red Hat Enterprise Linux 5.3 provides full support for FCoE on three specialized hardware implementations. These are: Cisco **fnic** driver, the Emulex **lpfc** driver, and the Qlogic **qla2xx** driver.

### iSER Support

iSER support, allowing for block storage transfer across a network, has been added to the **scsi-target-utils** package as a Technology Preview. In this release, single portal and multiple portals on different subnets are supported. There are known bugs when using multiple portals on the same subnet.

To set up the iSER target component install the scsi-target-utils and libibverbs-devel RPM. The library package for the InfiniBand hardware that is being used is also required. For example:

host channel adapters that use the **cxgb3** driver the **libcxb3** package is needed, and for host channel adapters using the **mtca** driver the **libmtca** package is needed.

There is also a known issue relating to connection timeouts in some situations. Refer to [Red Hat Bugzilla #470627](#) for more information on this issue.

## 2. Installation-Related Notes

This section includes information specific to **Anaconda** and the installation of Red Hat Enterprise Linux 5.3.

Red Hat Network can install the new and changed packages and upgrade an existing Red Hat Enterprise Linux 5 system. Alternatively, **Anaconda** can upgrade an existing Red Hat Enterprise Linux 5 system or perform a fresh installation of Red Hat Enterprise Linux 5.3.

Note: upgrading from beta releases of Red Hat Enterprise Linux 5.3 to this GA release is not supported.

Further, although **Anaconda** provides an option for upgrading from earlier major versions of Red Hat Enterprise Linux to Red Hat Enterprise Linux 5.3, Red Hat does not currently support this. More generally, Red Hat does not support in-place upgrades between any major versions of Red Hat Enterprise Linux. (A major version is denoted by a whole number version change. For example, Red Hat Enterprise Linux 4 and Red Hat Enterprise Linux 5 are both major versions of Red Hat Enterprise Linux.)

In-place upgrades across major releases do not preserve all system settings, services or custom configurations. Consequently, Red Hat strongly recommends fresh installations when upgrading from one major version to another.

### 2.1. All Architectures

- ▶ The **Text Mode** installation of **Anaconda** now offers the option of switching to Virtual Network Computing (VNC) to complete the installation.
- ▶ Creating or using encrypted software RAID member disks (i.e. **software RAID** partitions) is not supported. However, creating encrypted software RAID arrays (e.g. **/dev/md0**) is supported.
- ▶ The NFS default for RHEL5 is "locking". Therefore, to mount nfs shares from the %post section of anaconda, use the **mount -o nolock,udp** command to start the locking daemon before using nfs to mount shares.
- ▶ When installing from CD-ROM or DVD-ROM on a system with an iBFT-configured network device, **Anaconda** will not include any iBFT-configured storage devices unless networking is configured. To enable networking for the installation, use the command **linux updates=http://[any]** at the installation boot prompt. Note that **[any]** can be replaced with any URL.

If your system requires a static IP configuration, use the command **linux updates=http://[any] ip=[IP address] netmask=[netmask] dns=[dns]**.

- ▶ When installing Red Hat Enterprise Linux 5.3 on a fully virtualized guest, do *not* use the **kernel-xen** kernel. Using this kernel on fully virtualized guests can cause your system to hang.

If you are using an Installation Number when installing Red Hat Enterprise Linux 5.3 on a fully virtualized guest, be sure to deselect the **Virtualization** package group during the installation. The **Virtualization** package group option installs the **kernel-xen** kernel.

Note that paravirtualized guests are not affected by this issue. Paravirtualized guests always use the **kernel-xen** kernel.

- ▶ If you are using the Virtualized kernel when upgrading from Red Hat Enterprise Linux 5 to 5.2, you

must reboot after completing the upgrade. You should then boot the system using the updated Virtualized kernel.

The hypervisors of Red Hat Enterprise Linux 5 and 5.2 are not ABI-compatible. If you do not boot the system after upgrading using the updated Virtualized kernel, the upgraded Virtualization RPMs will not match the running kernel.

- When upgrading to Red Hat Enterprise Linux 5.1 or later from Red Hat Enterprise Linux 4.6, **gcc4** may cause the upgrade to fail. As such, you should manually remove the **gcc4** package before upgrading.
- The **firstboot** language plugin has been removed, as it does not properly and completely reconfigure the system when a new language is selected.
- When provisioning guests during installation, the **RHN tools for guests** option will not be available. When this occurs, the system will require an additional entitlement, separate from the entitlement used by **dom0**.

To prevent the consumption of additional entitlements for guests, install the **rhv-virtualization-common** package manually before attempting to register the system to Red Hat Network.

- Installing Red Hat Enterprise Linux 5.3 on a system with multiple network interfaces and manually specified IPv6 addresses may result in a partially incorrect networking setup. When this occurs, your IPv6 settings will not be visible on the installed system.

To work around this, set **NETWORKING\_IPV6** to **yes** in **/etc/sysconfig/network**. Then, restart your network connection using the command **service network restart**.

- If your system has **yum-rhn-plugin-0.5.2-5.el5\_1.2** (or an earlier version) installed, you will be unable to upgrade to Red Hat Enterprise Linux 5.3 through **yum update**. To work around this, upgrade your **yum-rhn-plugin** to the latest version (using **yum update yum-rhn-plugin**) before running **yum update**.
- Previously, **anaconda** could not access more than 8 *SmartArray* controllers. In this update, this issue has been resolved.
- A driver disk, supplied by an OEM, is a single image file (\*.img), containing potentially multiple driver packages and kernel modules. These drivers are used during installation to support hardware that otherwise would not be recognized by Red Hat Enterprise Linux 5. Once the driver packages and kernel modules are installed on the system, they are placed in the initial RAM disk (**initrd**) so that they are loaded when the system boots.

With this release, installation can automatically detect a driver disk (based on its file system label), thereby using the content of that disk during installation. This behavior is controlled by the installation command line option **dlabel=on**, which enables the automatic search. **dlabel=on** is the default setting for this release.

All block devices with the file system label **OEMDRV** are examined and drivers are loaded from these devices in the order by which they are detected.

- Existing encrypted block devices that contain **vfat** file systems will appear as type **foreign** in the partitioning interface; as such, these devices will not be mounted automatically during system boot. To ensure that such devices are mounted automatically, add an appropriate entry for them to **/etc/fstab**. For details on how to do so, refer to **man fstab**.

## 2.2. PowerPC Architectures

- The minimum RAM required to install Red Hat Enterprise Linux 5.2 is 1GB; the recommended RAM is 2GB. If a machine has less than 1GB RAM, the installation process may hang.
- Further, PowerPC-based machines that have only 1GB of RAM experience significant performance issues under certain RAM-intensive workloads. For a Red Hat Enterprise Linux 5.2 system to perform



RAM-intensive processes optimally, 4GB of RAM is recommended. This ensures the system has the same number of physical pages as was available on PowerPC machines with 512MB of RAM running Red Hat Enterprise Linux 4.5 or earlier.

## 2.3. s390x Architectures

- **anaconda** now supports both ports on CHPID for *OSA Express3 cards*. The installer will prompt for the port number in the initial stage of the installation. The value provided for the port also affects installed network interface startup script. When port 1 is selected, the value **portno=1** is added to **OPTIONS** parameter of **ifcfg-eth\*** file.



### Note

When installing under z/VM, you can add either **PORTNO=0** (to use port 0) or **PORTNO=1** (to use port 1) to the CMS configuration file to avoid being prompted for the mode.

- Installation on a machine with existing Linux or non-Linux filesystems on DASD block devices may cause the installer to halt. If this happens, it is necessary to clear out all existing partitions on the DASD devices you want to use and restart the installer.

## 2.4. ia64 Architecture

- If your system only has 512MB of RAM, attempting to install Red Hat Enterprise Linux 5.3 may fail. To prevent this, perform a base installation first and install all other packages after the installation finishes.
- Using **yum** to install packages from the **32-bit Compatibility Layer** disc may fail. If it does, it is because the Red Hat package signing key was not imported into the RPM database. This happens if you have not yet connected to Red Hat Network and obtained updates. To import the key manually, run the following command as root:

```
rpm --import /etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
```

Once the Red Hat GPG key is imported, you may now use **yum** to install packages from the **32-bit Compatibility Layer** disc.

Note that when installing from this disc, it is advisable to use **yum** instead of **rpm** to ensure that base OS dependencies are addressed during installation.

## 3. Feature Updates

### Block Device Encryption

Red Hat Enterprise Linux 5.3 includes support for block device encryption using the Linux Unified Key Setup (LUKS) specification. Encrypting a device protects all data on a block device against unauthorized access, even if the device has been physically removed from a system. To access the contents of an encrypted device, a user must provide a passphrase or key as authentication.

For information on setting up disk encryption, refer to Chapter 28 of the Red Hat Enterprise Linux Installation Guide at: <http://redhat.com/docs/>

### mac80211 802.11a/b/g WiFi protocol stack (mac80211)

The *mac80211* stack (formerly known as the *devicescape/d80211* stack) is now a supported

feature in Red Hat Enterprise Linux 5.3. It enables the **iwlwifi 4965GN** wireless driver for Intel® WiFi Link 4965 hardware which allows certain wireless devices to connect to any WiFi network.

Although the mac80211 component is supported in Red Hat Enterprise Linux 5.3, the symbols are not included in the symbol whitelist for the kernel.

## Global File System 2 (GFS2)

**GFS2** is an incremental advancement of GFS. This update applies several significant improvements that require a change to the on-disk file system format. GFS file systems can be converted to GFS2 using the utility **gfs2\_convert**, which updates the metadata of a GFS file system accordingly.

In Red Hat Enterprise Linux 5.2, **GFS2** was provided as a kernel module for evaluation purposes. In Red Hat Enterprise Linux 5.3, **GFS2** is now part of the kernel package. If the Red Hat Enterprise Linux 5.2 GFS2 kernel modules have been installed they must be removed to use GFS2 in Red Hat Enterprise Linux 5.3.

## Improvements in Driver Disk Support

A driver disk, supplied by an OEM, is a single image file (**\*.img**), containing potentially multiple driver RPMs and kernel modules. These drivers are used during installation to support hardware that otherwise would not be recognized. The RPMs are installed on the system and placed into the **initrd** so that they are supported when the machine reboots.

With Red Hat Enterprise Linux 5.3, installation can automatically detect the presence of a driver disk based on its file system label, and use the content of that disk during installation. This behavior is controlled by the installation command line option **dlabel=on**, which enables the automatic search. All block devices with the file system label **OEMDRV** are examined and drivers are loaded from these devices in the order in which they are encountered.

## iSCSI Boot Firmware Table

Red Hat Enterprise Linux 5.3 now fully supports the *iSCSI Boot Firmware Table (iBFT)* which allows for booting from iSCSI devices. This support required that iSCSI disks (nodes) are no longer marked to start up automatically; the installed system will no longer automatically connect and login to iSCSI disks when entering runlevel 3 or 5.

iSCSI is usually used for the root filesystem, in which case this change does not make a difference as the **initrd** will connect and login to the needed iSCSI disks even before the runlevel is entered.

However if iSCSI disks need to be mounted on non root directories, for example **/home** or **/srv**, then this change will impact you, since the installed system will no longer automatically connect and login to iSCSI disks that are not used for the root filesystem.

Using iSCSI disks mounted on non root directories is still possible, but requires the use of one of the following workarounds:

1. Install the system without use of iSCSI disks mounted on non root directories and later configure the relevant disks and mount points manually
2. Boot the installed system into runlevel 1, and mark any iSCSI disks that are not used for the root filesystem for automatic startup by using the following command once per disk:

```
iscsiadm -m node -T target-name -p ip:port -o update -n
```



## **node.startup -v automatic**

### **rhythmbox**

the **rhythmbox** audio player has been updated to version 0.11.6. This update provides the option to use proprietary GStreamer plugins.

### **lftp Rebase**

**lftp** has now been rebased to version 3.7.1. This applies several upstream feature updates and bug fixes, including:

- ▶ A security flaw in the way **lftp** quoted scripts generated by **mirror --script** (which could cause unauthorized privilege escalation) is now fixed.
- ▶ Using **lftp** with the option **-c** no longer causes **lftp** to hang.
- ▶ **lftp** no longer corrupts files during a transfer when using **sftp**.

For more information on **lftp** updates applied in this release, refer to <http://lftp.yar.ru/news.html>.

### **TTY Input Auditing**

*TTY input auditing* is now supported. If a process is marked for TTY input auditing, the data it reads from TTYs is audited; this will show up on audit records with type **TTY**.

You can use the **pam\_tty\_audit** module to mark a process (and its child processes) for TTY input auditing. For instructions on how to do this, refer to **man pam\_tty\_audit(8)**.

The TTY audit records contain the exact keystrokes read by the audited process. To make data decoding easier, **bash** audits the exact command line using the record type **USER\_TTY**.

The "TTY" audit records contain all data read by audited processes from the TTY. This includes data inserted into the input stream by the **TIOCSI ioctl** system call.

### **SystemTap Re-base**

SystemTap has been re-based to version 0.7.2. This update of SystemTap introduces several minor improvements, along with a few major features. These new features include:

- ▶ SystemTap now supports symbolic probing on x86, x86-64 and PowerPC architectures. This enables SystemTap scripts to place probes into user-space applications and shared libraries. As a result, SystemTap can now provide the same level of debugger probing on some user-space applications as kernel probing.

For example, if **coreutils-debuginfo** is installed, you can print a callgraph of the **ls** command using

**/usr/share/doc/systemtap-version/examples/general/callgraph.stp**, as in:

```
stap para-callgraph.stp 'process("ls").function("*")' -c 'ls -l'
```

In order to reduce the likelihood of an undetected version mismatch between the binary and its debuginfo RPMs, Red Hat advises that you set the **SYSTEMTAP\_DEBUGINFO\_PATH** environment variable to the value **+:.debug:/usr/lib/debug:build**.

SystemTap's support for symbolic probes also extends to markers placed into the kernel of this release. To use these markers, load the **kernel-trace** kernel module in

**/etc/rc.local** (using **modprobe kernel-trace**).

- ▶ SystemTap also supports remote compilation services. This enables a single computer on

the network to act as a debuginfo/compiler server for local SystemTap clients. The clients auto-locate the server using mDNS (**avahi**), and only need the **systemtap-client** and **systemtap-runtime** packages to work.

At present, this feature does not use security mechanisms like encryption. As such, it is advisable to use remote compilation services only within trusted networks. For more information, refer to **man stap-server**.

- ▶ The kernel update for this release includes a kernel API extension that significantly improves shutdown of SystemTap scripts. This added kernel API extension eliminates unnecessary synchronization between individual probe removal operations. As a result, SystemTap scripts that have hundreds of kernel probes are processed much faster. This is especially useful for administrators that use scripts with probes containing wildcards that capture numerous kernel events, such as **probe syscall.\* {}**.

For a complete list of SystemTap updates included in this release, refer to the following URL:

[http://sources.redhat.com/git/gitweb.cgi?p=systemtap.git;a=blob\\_plain;f=NEWS;hb=rhel53](http://sources.redhat.com/git/gitweb.cgi?p=systemtap.git;a=blob_plain;f=NEWS;hb=rhel53)

### Cluster Manager Update

The Cluster Manager utility (**cman**) has been updated to version 2.0.97. This applies several bug fixes and enhancements, most notably:

- ▶ **cman** now uses the following firmware versions: APC AOS v3.5.7 and APC rpdu v3.5.6. This fixes a bug that prevented the **APC 7901** from using simple network management protocol (SNMP) properly.
- ▶ **fence\_drac**, **fence\_ilo**, **fence\_egenera**, and **fence\_bladecenter** agents now support **ssh**.
- ▶ **fence\_xvmd** key files can now be reloaded without restarting.
- ▶ A single fence method can now support up to 8 fence devices.

### RPM Re-Base

The **RedHat Package Manager** (RPM) is now re-based to the Fedora 9 upstream version. **rpm** now adds secondary architecture-specific macro files on multi-arch systems. In addition, **rpm** now meets all certification criteria for inclusion in Red Hat Enterprise Linux 5.

This update also applies several upstream enhancements and bug fixes to **rpm**, including:

- ▶ **rpm** no longer generates unnecessary **.rpmnew** and **.rpmsave** files on multi-arch systems.
- ▶ A bug in the **rpmgiNext()** function of **rpm** prevented proper error reporting. This update applies the proper semantics for error reporting, thereby ensuring that **rpm** returns the correct exit code in all instances.

### Open Fabrics Enterprise Distribution (OFED) / opensm

**opensm** has been updated to the upstream version 3.2, including a minor change to the opensm library API.

- ▶ The format of the **opensm.conf** file has changed. If you have made custom modifications to your existing **opensm.conf**, rpm will automatically install the new **opensm.conf** file as **/etc/ofed/opensm.conf.rpmnew**. You will need to migrate your modifications to this file and then replace the existing opensm.conf file with the result.

- Red Hat closely tracks the upstream Open Fabrics Enterprise Distribution (OFED) code base in order to provide a maximal level of enablement for this still evolving technology. As a consequence, Red Hat can only preserve API/ABI compatibility across minor releases to the degree that the upstream project does. This is an exception from the general practice in the development of Red Hat Enterprise Linux.

Because of this, applications build on top of the OFED stack (listed below), might require recompilation or even source-level code changes when moving from one minor release of Red Hat Enterprise Linux to a newer one.

This generally is not required for other applications, built on the Red Hat Enterprise Linux software stack. The components affected are:

- dapl
- compat-dapl
- ibsim
- ibutils
- infiniband-diags
- libcxgb3
- libehca
- libibcm
- libibcommon
- libibmad
- libibumad
- libibverbs
- libipathverbs
- libmlx4
- libmthca
- libnes
- librmdacm
- libsdp
- mpi-selector
- mpitests
- mstflint
- mvapich
- mvapich2
- ofed-docs
- openib
- openib-mstflint
- openib-perftest
- openib-tvflash
- openmpi
- opensm
- perftest
- qlvnictools
- qperf
- rds-tools (future)
- srptools

- tvflash

## Net-SNMP Re-Base

**Net-SNMP** has been re-based to upstream version 5.3.2.2. This update adds Stream Control Transmission Protocol (SCTP) support (as per RFC 3873, <http://www.ietf.org/rfc/rfc3873.txt>) and introduces two new configuration options (to be used in `/etc/snmpd.conf`):

- ▶ **dontLogTCPWrappersConnects** — suppresses logging of connection attempts.
- ▶ **v1trapaddress** — enables administrators to set an agent's IP address inside outgoing SNMP traps.

This update also features several bug fixes from upstream, including:

- ▶ The **snmpd** daemon now functions properly on systems with more than 255 network interfaces. In addition, **snmpd** also reports an error now when it is configured to listen on any port higher than 65535.
- ▶ A race condition that caused the **snmpd** daemon to leak file descriptors when reading from `/proc` is now fixed.
- ▶ The **snmpd** daemon now correctly reports **hrProcessorLoad** object IDs (OID), even on multi-CPU hardware. Note, however, that it takes approximately one minute from daemon startup to calculate the value of the OID.
- ▶ The **net-snmp-devel** package is now dependent on the **lm\_sensors-devel** package.

## OpenSSL Re-Base for FIPS Certification

The **openssl** packages upgrade the **OpenSSL** library to a newer upstream version, which is currently undergoing the Federal Information Processing Standards validation process (FIPS-140-2). The FIPS mode is disabled by default, to ensure that the OpenSSL library maintains feature parity and ABI compatibility with the previous releases of the **openssl** packages in Red Hat Enterprise Linux 5.

This update also applies the following upstream fixes:

- ▶ By default, **zlib** compression is used for SSL and TLS connections. On *IBM System z* architectures with Central Processor Assist for Cryptographic Function (CPACF), compression became the main part of the CPU load, and total performance was determined by the speed of the compression (not the speed of the encryption). When compression is disabled, the total performance is much higher. In these updated packages, **zlib** compression for SSL and TLS connections can be disabled with the **OPENSSL\_NO\_DEFAULT\_ZLIB** environment variable. For TLS connections over a slow network, it is better to leave compression on, so that the amount of data to be transferred is lower.
- ▶ When using the **openssl** command with the **s\_client** and **s\_server** options, the default CA certificates file (`/etc/pki/tls/certs/ca-bundle.crt`), was not read. This resulted in certificates failing verification. In order for certificates to pass verification, the **-CAfile /etc/pki/tls/certs/ca-bundle.crt** option had to be used. In these updated packages, the default CA certificates file is read, and no longer needs to be specified with the **-CAfile** option.

## yum Re-Base

**yum** has been re-based to upstream version 3.2.18. This update improves the speed at which

**yum** operates, thereby alleviating the problem posed by the ever-growing number of packages included with each minor release. In addition, this update also introduces the `reinstall` command, improves the interface for several commands, and applies several bug fixes, including:

- Any **yum** commands would fail if the `-c` option was used to specify a configuration file residing on a web address (`http`). This bug is now fixed.
- A `checkSignal()` function in **yum** called an incorrect exit function; as such, exiting **yum** would result in a traceback instead. With this release, **yum** now exits properly.

### flash-plugin Re-Base

The **flash-plugin** package has been re-based to version 10.0.12.36. This update applies several security fixes that were included in a previous **flash-plugin** ASYNC update. Further, this updated plugin also contains **Adobe Flash Player 10**, which includes the following bug fixes and feature enhancements:

- Improved stability on the Linux platform by fixing a race condition issue in sound output.
- New support for custom filters and effects, native 3D transformation and animation, advanced audio processing, a new, more flexible text engine, and GPU hardware acceleration.

For more information about this update, refer to the **Adobe Flash Player 10** release notes at the following link:

[http://www.adobe.com/support/documentation/en/flashplayer/10/Flash\\_Player\\_10\\_Release\\_Notes.pdf](http://www.adobe.com/support/documentation/en/flashplayer/10/Flash_Player_10_Release_Notes.pdf)

### gdb Rebase

**gdb** has now been rebased to version 6.8. This applies several upstream feature updates and bug fixes, most notably: support for breakpoints inside **C++** templates, constructors and inline functions.

For more information on **gdb** updates applied in this release, refer to <http://sourceware.org/cgi-bin/cvsweb.cgi/src/gdb/NEWS?rev=1.259.2.1&cvsroot=src>.

### Instruction Based Sampling on AMD Family10h processors

New hardware profiling support for the AMD Family10h processors has been added for Red Hat Enterprise Linux 5.3. These new AMD CPUs support Instruction Based Sampling (IBS). IBS support requires changes to the oProfile driver to gather this information and initialize the new Model Specific Registers (MSRs) associated with these new features.

This update adds the new **IBS\_FETCH** and **IBS\_OP** profiling samples to the per CPU buffers and the event buffers of the oProfile driver. New control entries have also been added to `/dev/oprofile` to control IBS sampling. These changes are backward compatible with the previous PMC only version of the driver, and a separate patch is available to oProfile 0.9.3 to use this new data.

For more information on IBS refer to the paper: [Instruction-Based Sampling: A New Performance Analysis Technique for AMD Family 10h Processors, November 19, 2007](#)

### Squid Re-base

**Squid** has been re-based to the latest stable upstream version (STABLE21). This update

addresses several bugs, including:

- ▶ The **squid init** script always incorrectly returned an exit code of 0. This bug is now fixed, making squid compliant now with Linux Standard Base.
- ▶ Using the **refresh\_stale\_hit** directive causes error message **Clock going backwards** to appear in the **squid** log file.
- ▶ The **squid** installation process did not set up correct ownership of the **/usr/local/squid** directory. With this release, the user **squid** is now the default owner of **/usr/local/squid**.
- ▶ Whenever **squid** attempts to use the function **hash\_lookup()**, it could abort with **signal 6**.
- ▶ Using **squid\_unix\_group** could cause **squid** to crash.

### Event Multi-Processing Model in Apache

**httpd**, the Apache HTTP Server package, now includes the experimental *event* Multi-Processing Model (MPM). This MPM improves performance by using dedicated threads to handle keepalive connections.

### libgomp re-base

**libgomp** has been re-based to version 4.3.2-7.el5. The re-base improves **OpenMP** performance and adds support for **OpenMP** version 3.0 when used with the **gcc43** compiler.

### iSCSI target capability

The iSCSI target capability, delivered as part of the Linux Target (tgt) framework, moves from Technology Preview to full support in Red Hat Enterprise Linux 5.3. The linux target framework allows a system to serve block-level SCSI storage to other systems that have a SCSI initiator. This capability is being initially deployed as a Linux iSCSI target, serving storage over a network to any iSCSI initiator.

To set up the iSCSI target, install the **scsi-target-utils** RPM and refer to the instructions in: **/usr/share/doc/scsi-target-utils-[version]/README** and **/usr/share/doc/scsi-target-utils-[version]/README.iscsi**

## 4. Driver Updates

### 4.1. All Architectures

#### General Driver/Platform Updates

- ▶ The Intel High Definition Audio driver in ALSA has been updated.
- ▶ High-Definition Multimedia Interface (HDMI) audio support on AMD ATI integrated chipsets has been updated.
- ▶ The following Wacom graphics tablets are now supported through the **linuxwacom** drivers:
  - Cintiq 20WSX
  - Intuos3 4x6
- ▶ the **lpfc** driver for Emulex Fibre Channel Host Bus Adapters has been updated to version

8.2.0.33.2p. This applies several upstream changes, most notably:

- the `NETLINK_SCSITRANSPORT` socket is now used
- Resolved uninitialized node access.
- fixed a bug that caused echotest failure when NPIV is enabled.
- **fcauthd** 1.19 is now required for fibre channel authentication.

► **dm-multipath** now has inbox support for IBM DS4000.

► The **ixgbe** driver now supports the 82598AT dual-port adapter and the 82598 CX4 adapter.

► the **jsm** driver has been updated to add support for **Digi Neo PCI Express 4 HiProfile** I/O adapters.

► **hp-ilo**: driver added, providing support for HP Integrated Lights Out (iLO) technology.

► The **radeon\_tp** driver is now fully supported in this release. This driver enables the *ATI R500/R600* chipsets.

This driver also features the following capabilities:

- Modesetting on *R500/R600* chipsets
- 2D acceleration on *R500* chipsets
- Shadow framebuffer acceleration on *R600* chipsets

► The **powernow-k8** driver is now included in this release as a loadable module. This ensures that existing driver frameworks (such as the *Red Hat Driver Update Model* and *Dell DKMS*) can deliver **powernow-k8** driver updates to users as RPM packages without requiring them to upgrade the kernel.

► For this release, Red Hat is re-adding **pnm2ppa** in order to provide support for legacy printers. Note, however, that this support is deprecated and will be discontinued in future major releases.

► The **ccid** driver has been re-based to add support for USB Smartcard keyboards.

► the **uvcvideo** drivers for USB video devices has been added to the kernel in Red Hat Enterprise Linux 5.3.

## Network

► The **bnx2** driver for the Broadcom NetXtreme II network cards has been updated to version 1.7.9. This update fixes the ethernet ring buffer options on controllers that use **bnx2** to fix a bug that caused the system to panic at boot.

► The **e1000e** driver for Intel PRO/1000 ethernet devices has been updated to the upstream version 0.3.3.3-k2. With this update, the EEPROM and NVM of supported devices are now write-protected.

► **igb**: driver for Intel Gigabit Ethernet Adapters has been updated to version 1.2.45-k2, adding support for 82576 based devices.

► the **ixgbe** driver for Intel(R) 10 Gigabit PCI Express network devices has been updated to version 1.3.18-k4.

► the **niu** driver has been added to Red Hat Enterprise Linux 5.3, adding support for 10Gbps ethernet devices on Sun CP3220 systems.

► the **ipw2100** and **ipw2200** drivers for Intel PRO Wireless devices has been backported to Red Hat Enterprise Linux 5.3 from Linux Kernel 2.6.25.

► the **bcm43xx** driver for Broadcom Wireless devices has been backported to Red Hat Enterprise Linux 5.3 from Linux Kernel 2.6.25.

► the **ieee80211** support component for wireless devices has been backported to Red Hat Enterprise Linux 5.3 from Linux Kernel 2.6.25.

► the **zd1211rw** driver for ZyDAS Wireless devices has been updated to match the last non-mac80211 version from just prior to Linux 2.6.25.



- ▶ the **iwlwifi** drivers have been updated to version from 2.6.26, adding 802.11n support to **iwl4965** wireless devices. Several bug fixes included in post-2.6.26 versions of the driver were also incorporated into the backported driver.
- ▶ the **myri10ge** driver for Myricom Myri-10G Ethernet devices has been updated to version 1.3.2-1.269.
- ▶ the **netxen** driver for NetXen network cards has been updated to version 3.4.18.
- ▶ The **bnx2x** driver for Broadcom Everest network devices has been updated to version 1.45.23, adding support for the 57711 hardware.
- ▶ the **forcedeth-msi** driver has been updated to fix a bug that prevented proper link-up detection.
- ▶ the **ath5k** driver for Atheros wireless devices has been backported to Red Hat Enterprise Linux 5.3 from Linux Kernel 2.6.26.
- ▶ the **rt2x00** drivers for Ralink wireless devices has been backported to Red Hat Enterprise Linux 5.3 from Linux Kernel 2.6.26.
- ▶ the **rtl8180** and **rtl8187** drivers for Realtek wireless devices has been backported to Red Hat Enterprise Linux 5.3 from Linux Kernel 2.6.26.

## Storage

- ▶ **3w-xxxx**: driver for 3ware SATA RAID Controllers updated to version 1.26.03. This applies several upstream changes, most notably:
  - Fixed a bug that caused data corruption when using a 3ware 7000 or 8000 series card in a system with greater than 2GB of RAM.
  - Anaconda no longer hangs on 64-bit architectures when using a 3ware 8006 series card in a system with greater than 4GB of RAM.
  - The irq handler is now freed when **\_\_tw\_shutdown()** is initiated. This prevents a possible null pointer de-reference if an interrupt was shared during shutdown.
  - RCD bit for caching mode page is now turned on.
  - **ioctl** resets and **scsi** resets are now serialized so they no longer collide.
- ▶ **3w-9xxx**: driver for 3ware SATA RAID Controllers updated to version 2.26.08. This applies several upstream changes, most notably:
  - The **pci\_unmap\_single()** call now functions correctly on systems with greater than 4GB of RAM
  - Fixed a bug that caused slow write performance.
  - The DMA mask setting now reverts to 32-bit if 64-bit fails.
  - Added support for the 3ware 9690SA SAS Controller Device.
- ▶ **megaraid\_sas**: driver updated to version *4.01-rh1*. Several bug fixes are applied by this update, including:
  - **MFI\_POLL\_TIMEOUT\_SECS** is now 60 seconds.
  - Fixed a bug that caused continuous chip resets and command timeouts due to frame count calculation.
  - Added support for the *LSI Generation 2 Controllers* (0078, 0079).
  - Added a command to shutdown DCMD in the shutdown routine to improve firmware shutdown.
  - Fixed a bug that caused unexpected interrupts in the hardware Linux driver.
- ▶ the **qla2xxx** driver for QLogic Fibre Channel Host Bus Adapters has been updated, adding support for ISP84XX type cards.
- ▶ the **ibmvscsi** drivers for emulating virtual SCSI (vSCSI) devices has been updated, providing support for virtualized tape devices.
- ▶ **lpfc**: driver updated to version 8.2.0.30. This update applies several bug fixes and enhancements,



including:

- Improved Enhanced Error Handling (EEH) for PCI adapters on PowerPC architectures
  - Increased the number of supported NPV virtual ports
  - Improved driver logic to control I/O queue depth
  - Added support for Fibre Channel over Ethernet (FCoE) adapters
  - Booting from SAN for new hardware is now supported
- the **cciss** driver for HP Smart Array controllers has been updated to version 3.6.20-RH2.

## 5. Kernel-Related Notes

### 5.1. All Architectures

- **relayfs** previously had a buffer size limit of 64MB. In this update, the limitation of the memory allocated to relayfs for on-memory buffers has been increased to 4095MB. This allows **SystemTap** and other tracing tools that utilize **relayfs** the ability to trace more events.
- The driver for **Dell Remote Access Controller 4** (DRAC4) was not present. Consequently, any virtual devices provided by the DRAC4 were not being detected by the kernel. In this update, the `pata_sil680` kernel module that provides the appropriate driver has been added, which resolves this issue.
- The message buffers for the relay interface were only allocated for online CPUs when **relay\_open()** was called. Consequently, if an off-line CPU was turned on after **relay\_open()** was called, a kernel panic would occur. In this update, a new message buffer is allocated dynamically if any new CPUs are added.
- The driver for 8250 based serial ports has been updated to add support for DSR/DTR hardware flow control.
- Support for *Dell Wireless Wide Area Network (WWAN)* cards has been added to the kernel. Devices that are now supported are:
  - Dell Wireless 5700 Mobile Broadband CDMA/EVDO Mini-Card
  - Dell Wireless 5500 Mobile Broadband HSDPA Mini-Card
  - Dell Wireless 5505 Mobile Broadband HSDPA Mini-Card
  - Dell Wireless 5700 Mobile Broadband CDMA/EVDO ExpressCard
  - Dell Wireless 5510 Mobile Broadband HSDPA ExpressCard
  - Dell Wireless 5700 Mobile Broadband CDMA/EVDO Mini-Card
  - Dell Wireless 5700 Mobile Broadband CDMA/EVDO Mini-Card
  - Dell Wireless 5720
  - Dell Wireless HSDPA 5520
  - Dell Wireless HSDPA 5520
  - Dell Wireless 5520 Voda I Mobile Broadband (3G HSDPA) Mini-Card
- the **thinkpad\_acpi** kernel module has been updated to provide enhanced support for newer Thinkpad models.
- The soft lockup detector can now be configured to trigger a kernel panic instead of a warning message. This makes it possible for users to generate and analyze a crash dump during a soft lockup for forensic purposes.

To configure the soft lockup detector to generate a panic, set the kernel parameter **soft\_lockup** to **1**. This parameter is set to **0** by default.
- **oprofile** did not correctly identify processors based on the Next-Generation Intel

Microarchitecture (Nehalem). Consequently, the performance monitoring unit could not be used and the processor fell back to the timer interrupt. The kernel has been updated to resolve this issue.

- Support has been added to the kernel for the CPU power state, C3, on the Next-Generation Intel Microarchitecture (Nehalem). The ability to enter C3 (also known as the sleep state) improves the power efficiency of the CPU when idle.
- Previously, the **MAX\_ARG\_PAGES** limit that is set in the kernel was too low, and may have resulted in the following error:

```
execve: Argument list too long
```

In this update, this limit has been increased to 25 percent of the stack size, which resolves this issue.

- **autofs4** updates have been backported to Red Hat Enterprise Linux 5.3 from linux kernel version 2.6.27.
- Red Hat Enterprise Linux 5.3 now includes the ability to specify that core files be piped to a forked copy of a user space application, rather than directly to a file. This is enabled by placing | **path/to/application** in **/proc/sys/kernel/core\_pattern**. When a core is dumped, a copy of the specified application will be executed, and the core will be piped to it on stdin. This allows for the core to be augmented, analyzed and actively handled at core dump time.
- The file **/proc/cpuinfo** now reports the ID of the Advanced Programmable Interrupt Controller (APIC) that is used by each individual CPU.
- The Machine Check Exception (MCE) kernel subsystem has been enhanced to support larger memory configurations as needed by new systems.
- The mount command now supports Kerberos authentication when mounting filesystems via Samba. The **sec=krb5** or **sec=krb5i** switch allows the kernel to call a userspace application (**cifs.upcall**) which returns a SPNEGO (Simple and Protected GSSAPI Negotiation Mechanism) security blob (Binary Large Object). The kernel can then use this blob to authenticate with the server and mount the requested filesystem.
- If you configured the kernel parameter **kernel.unknown\_nmi\_panic** on a system that used the IOAPIC NMI watchdog method, a kernel panic could occur. This is because the NMI watchdog could not disable the source of NMIs securely.

With this release, the NMI watchdog code has been revised to allow users to safely disable the NMI source. As such, you can now safely configure the kernel parameter **kernel.unknown\_nmi\_panic** on systems that use the IOAPIC NMI watchdog method.

## 5.2. x86 Architectures

- The **powernowk8** driver was not performing sufficient checks on the number of running CPUs. Consequently, when the driver was started, a kernel oops error message may have been reported. In this update the **powernowk8** driver verifies that the number of supported CPUs (**supported\_cpus**) equals the number of online CPUs (**num\_online\_cpus**), which resolves this issue.

## 5.3. PowerPC Architectures

- **CPUFreq**, the kernel subsystem that scales CPU frequency and voltage, has been updated with improved support for Cell Processors. This update implements a Synergistic Processing Unit (SPU) aware CPUFreq governor that enhances the power management of Cell processors.
- Error Detection and Correction (EDAC) is now supported on the Cell Broadband Engine Architecture in Red Hat Enterprise Linux 5.3. To enable EDAC, use the command: **modprobe cell\_edac**  
To check this module has been added to your running kernel, check **/var/log/dmesg** for output like

the following:

```
EDAC MC: Ver: 2.0.1 Oct  4 2008
EDAC MC0: Giving out device to cell_edac MIC: DEV cbe-mic
EDAC MC1: Giving out device to cell_edac MIC: DEV cbe-mic
```

If correctable memory errors are encountered, the following message will be returned to the console:

```
EDAC MC0: CE page 0xefff, offset 0x5700, grain 0, syndrome 0x51, row 0, channel
0, label "":
```

- Debugging with hardware watchpoints using a variable that is shared between multiple threads was causing the GNU Debugger (**GDB**) to erratically miss trigger events. The kernel has been updated to allow **GDB** to consistently receive the watchpoint triggers, improving the reliability of the debugging session.

## 5.4. x86\_64 Architectures

- **kprobe-booster** is now supported on the ia64 and x86\_64 architectures, allowing users to probe kernel events much faster. This feature will also decrease the overhead caused by probing tools (e.g. SystemTap and Kprobes) on servers running on 64-bit architecture.
- Support has been added to the kernel for the **\_PTC** (Processor Throttling Control), **\_TSS** (Throttling Supported States) and **\_TPC** (Throttling Present Capabilities) objects. This support, which is part of the Advance Configuration and Power Interface specification (ACPI) provides improved management of processor throttling.

## 5.5. s390x Architectures

- In `zipl.conf`, parameters enclosed with double quotes inside of single quotes (ie **parameters='vmhalt="LOGOFF"'**) were being parsed incorrectly. Consequently, installing the kernel-kdump package may have failed, resulting in the error:

```
grubby fatal error: unable to find a suitable template
```

To resolve this issue, parameters should be enclosed with single quotes inside of double quotes (ie **parameters="vmhalt='LOGOFF'"**)



### Note

The syntax structure of single quotes inside of double quotes is the default in Red hat Enterprise Linux 5.

## 5.6. ia64 Architecture

- The Dual-Core Intel Itanium 2 processor filled out machine check architecture (MCA) records differently to previous Intel Itanium processors. The cache check and bus check target identifiers can now be different in some circumstances. The kernel has been updated to find the correct target identifier.
- **kprobe-booster** is now supported on the ia64 and x86\_64 architectures, allowing users to probe kernel events much faster. This feature will also decrease the overhead caused by probing tools (e.g. SystemTap and Kprobes) on servers running on 64-bit architecture.

- In this update, support for **pselect()** and **ppoll()** system calls has been added to the kernel.

## 6. Virtualization

This section contains information about updates made to Red Hat Enterprise Linux suite of Virtualization tools.

### 6.1. Feature Updates

- The blkmap (blockmap) userspace toolkit has been updated, providing the functionality to monitor the transfer statistics of blkmap backed virtualized guests.
- Support was added for the Intel Extended Page Table (EPT) feature, improving performance of fully virtualized guests on hardware that supports EPT.
- **e1000** network device emulation for guests has been added in this update, supporting only Windows 2003 guests on the ia64 architecture. To use e1000 emulation, the xm command must be used.
- Drivers for **virtio**, the platform for I/O virtualization in KVM, has been backported to Red Hat Enterprise Linux 5.3 from Linux Kernel 2.6.27. These drivers will enable KVM guests to achieve higher levels of I/O performance. Various userspace components such as: **anaconda**, **kudzu**, **lvm**, **selinux** and **mkinitrd** have also been updated to support virtio devices.
- The native Linux kernel supports **vmcoreinfo** automatically, but, to setup kdump on dom0 domains, the **kernel-xen-debuginfo** package was needed. With this release, the kernel and the hypervisor have been modified and now support vmcoreinfo reading and writing kdump natively. Users needing to use kdump for de-bugging or other investigations on dom0 domains can now do so without installing the **debuginfo** or **debuginfo-common** packages.
- Fully virtualized Red Hat Enterprise Linux 5 guests encountered suboptimal performance when using emulated disk and network devices. In this update, the kmod-xenpv package has been included to simplify the use of paravirtualized disks and networks in fully virtualized guests.  
Using these drivers in fully virtualized guests can significantly improve the performance and functionality of fully virtualized guests. Bug fixes made for netfront and block front drivers are immediately realized and synchronized with the kernel package.
- Guests now have the ability to utilize 2MB backing page memory tables, which can improve system performance.

### 6.2. Resolved Issues

#### 6.2.1. All Architectures

- Shutting down a paravirtualized guest may have caused the dom0 to stop responding for a period of time. Delays of several seconds were experienced on guests with large amounts of memory (ie 12GB and above.) In this update, the virtualized kernel allows the shutdown of a large paravirtualized guest to be pre-emptible, which resolves this issue.
- **crash** was unable to read the relocation address of the hypervisor from a vmcore file. Consequently, opening a Virtualized kernel vmcore file with crash would fail, resulting in the error:

```
crash: cannot resolve "idle_pg_table_4"
```

In this update, the hypervisor now saves the address correctly, which resolves this issue.

- Previously, paravirtualized guests could only have a maximum of 16 disk devices. In this update, this limit has been increased to a maximum of 256 disk devices.

- ▶ Memory reserved for the `kdump` kernel was incorrect, resulting in unusable crash dumps. In this update, the memory reservation is now correct, allowing proper crash dumps to be generated.
- ▶ Attaching a disk with a specific name (ie. `/dev/xvdaa`, `/dev/xvdab`, `/dev/xvdbc` etc.) to a paravirtualized guest resulted in a corrupted `/dev` device inside the guest. This update resolves the issue so that attaching disks with these names to a paravirtualized guest creates the proper `/dev` device inside the guest.
- ▶ Previously, the number of loopback devices was limited to 4. Consequently, this limited the ability to create bridges on systems with more than 4 network interfaces. In this update, the **netloop** driver now creates additional loopback devices as required.
- ▶ A race condition could occur when creating and destroying virtual network devices. In some circumstances — especially high load situations — this would cause the virtual device to not respond. In this update, the state of the virtual device is checked to prevent the race condition from occurring.
- ▶ a memory leak in **virt-manager** would be encountered if the application was left running. Consequently, the application would constantly consume more resources, which may have led to memory starvation. In this update, the leak has been fixed, which resolves this issue.
- ▶ the **crash** utility could not analyze **x86\_64** vmcores from systems running **kernel-xen** because the Red Hat Enterprise Linux hypervisor was relocatable and the relocated physical base address is not passed in the vmcore file's ELF header. The new **--xen\_phys\_start** command line option for the crash utility allows the user to pass crash the relocated base physical address.
- ▶ Not all mouse events were being captured and processed by the **Paravirtual Frame Buffer (PVFB)**. Consequently, the scroll wheel did not function when interacting with a paravirtualized guest with the **Virtual Machine Console**. In this update, scroll wheel mouse events are now handled correctly, which resolves this issue.
- ▶ Using Virtualization on a machine with a large number of CPUs may have caused the hypervisor to crash during guest installation. In this update, this issue has been resolved.
- ▶ On Intel processors that return a *CPUID* family value of 6, only one performance counter register was enabled in **kernel-xen**. Consequently, only counter 0 provided samples. In this update, this issue has been resolved.

### 6.2.2. x86 Architectures

- ▶ On systems with newer CPU's, the CPU APIC ID differs from the CPU ID. Consequently, the virtualized kernel was unable to initialize CPU frequency scaling. In this update, the virtualized kernel now retrieves CPU APIC ID from the hypervisor, allowing CPU frequency scaling to be initialized properly.
- ▶ When running an x86 paravirtualized guest, if a process accessed invalid memory, it would run in a loop instead of getting a SEGV signal. This was caused a flaw in the way execshield checks were done under the hypervisor. In this update, this issue has been resolved.

### 6.2.3. ia64 Architecture

- ▶ A **xend** bug that previously caused guest installation failures is now fixed.
- ▶ the **evtchn** event channel device lacked locks and memory barriers. This led to **xenstore** becoming unresponsive. In this update, this issue has been resolved.
- ▶ Non-Uniform Memory Access (NUMA) information was not being displayed by the **xm info** command. Consequently, **node\_to\_cpu** value for each node was being incorrectly returned as **no cpus**. In this update, this issue has been resolved.
- ▶ Previously, creating a guest on a Hardware Virtual Machine (HVM) would fail on processors that include the VT-i2 technology. In this update, this issue has been resolved.

### 6.2.4. x86\_64 Architectures

- » When the Dynamic IRQs available for guests virtual machines were exhausted, the **dom0** kernel would crash. In this update, the crash condition has been fixed, and the number of available IRQs has been increased, which resolves this issue.
- » On systems with newer CPU's, the CPU APIC ID differs from the CPU ID. Consequently, the virtualized kernel was unable to initialize CPU frequency scaling. In this update, the virtualized kernel now retrieves CPU APIC ID from the hypervisor, allowing CPU frequency scaling to be initialized properly.

## 6.3. Known Issues

### 6.3.1. All Architectures

- » Diskette drive media will not be accessible when using the virtualized kernel. To work around this, use a USB-attached diskette drive instead.  
Note that diskette drive media works well with other non-virtualized kernels.
- » In live migrations of paravirtualized guests, time-dependent guest processes may function improperly if the corresponding hosts' (dom0) times are not synchronized. Use NTP to synchronize system times for all corresponding hosts before migration.
- » Repeated live migration of paravirtualized guests between two hosts may cause one host to panic. If a host is rebooted after migrating a guest out of the system and before migrating the same guest back, the panic will not occur.
- » Formatting a disk when running **Windows 2008** or **Windows Vista** as a guest can crash when the guest has been booted with multiple virtual CPUs. To work around this, boot the guest with a single virtual CPU when formatting.
- » Fully virtualized guests created through **virt-manager** may sometimes prevent the mouse from moving freely throughout the screen. To work around this, use **virt-manager** to configure a USB tablet device for the guest.
- » The maximum CPUs must be restricted to less than 128 when on a 128 or greater CPU system. The maximum that is supported at this time is 126. Use the **maxcpus=126** hypervisor argument to limit the Hypervisor to 126
- » Fully virtualized guests cannot correct for time lost due to the domain being paused and unpaused. Being able to correctly track the time across pause and unpause events is one of the advantages of paravirtualized kernels. This issue is being addressed upstream with replaceable timers, so fully virtualized guests will have paravirtualized timers. Currently, this code is under development upstream and should be available in later versions of Red Hat Enterprise Linux.
- » Repeated migration of paravirtualized guests may result in **bad mpa** messages on the **dom0** console. In some cases, the hypervisor may also panic.  
To prevent a hypervisor kernel panic, restart the migrated guests once the bad mpa messages appear.
- » When setting up interface bonding on **dom0**, the default **network-bridge** script may cause bonded network interfaces to alternately switch between **unavailable** and **available**. This occurrence is commonly known as *flapping*.  
To prevent this, replace the standard **network-script** line in **/etc/xen/xend-config.sxp** with the following line:

```
(network-script network-bridge-bonding netdev=bond0)
```



Doing so will disable the *netloop* device, which prevents Address Resolution Protocol (ARP) monitoring from failing during the address transfer process.

- When running multiple guest domains, guest networking may temporarily stop working, resulting in the following error being reported in the dom0 logs:

Memory squeeze in netback driver

To work around this, raise the amount of memory available to the dom0 with the **dom0\_mem** hypervisor command line option.

### 6.3.2. x86 Architectures

- Migrating paravirtualized guests through **xm migrate [domain] [dom0 IP address]** does not work.
- When installing Red Hat Enterprise Linux 5 on a fully virtualized SMP guest, the installation may freeze. This can occur when the host (**dom0**) is running Red Hat Enterprise Linux 5.2.

To prevent this, set the guest to use a single processor using the **install**. You can do this by using the **--vcpus=1** option in **virt-install**. Once the installation is completed, you can set the guest to SMP by modifying the allocated **vcpus** in **virt-manager**.

### 6.3.3. x86\_64 Architectures

- Migrating paravirtualized guests through **xm migrate [domain] [dom0 IP address]** does not work.
- Installing the Virtualization feature may cause a **time went backwards** warning on HP systems with model numbers xw9300 and xw9400.

To work around this issue for xw9400 machines, configure the BIOS settings to enable the **HPET** timer. Note that this option is not available on xw9300 machines.

- Installing Red Hat Enterprise Linux 3.9 on a fully virtualized guest may be extremely slow. In addition, booting up the guest after installation may result in **hda: lost interrupt** errors.

To avoid this startup error, configure the guest to use the SMP kernel.

- Upgrading a host (**dom0**) system to Red Hat Enterprise Linux 5.2 may render existing Red Hat Enterprise Linux 4.5 SMP paravirtualized guests unbootable. This is more likely to occur when the host system has more than 4GB of RAM.

To work around this, boot each Red Hat Enterprise Linux 4.5 guest in single CPU mode and upgrade its kernel to the latest version (for Red Hat Enterprise Linux 4.5.z).

### 6.3.4. ia64 Architecture

- Migrating paravirtualized guests through **xm migrate [domain] [dom0 IP address]** does not work.
- On some *Itanium* systems configured for console output to VGA, the **dom0** virtualized kernel may fail to boot. This is because the virtualized kernel failed to properly detect the default console device from the *Extensible Firmware Interface* (EFI) settings.

When this occurs, add the boot parameter **console=tty** to the kernel boot options in **/boot/efi/elilo.conf**.

- On some *Itanium* systems (such as the *Hitachi Cold Fusion 3e*), the serial port cannot be detected in **dom0** when VGA is enabled by the EFI Maintenance Manager. As such, you need to supply the following serial port information to the **dom0** kernel:
  - Speed in bits/second

- Number of data bits
- Parity
- **io\_base** address

These details must be specified in the **append=** line of the **dom0** kernel in **/boot/efi/eliilo.conf**. For example:

```
append="com1=19200,8n1,0x3f8 -- quiet rhgb console=tty0  
console=ttyS0,19200n8"
```

In this example, **com1** is the serial port, **19200** is the speed (in bits/second), **8n1** specifies the number of data bits/parity settings, and **0x3f8** is the **io\_base** address.

- Virtualization does not work on some architectures that use Non-Uniform Memory Access (NUMA). As such, installing the virtualized kernel on systems that use NUMA will result in a boot failure. Some installation numbers install the virtualized kernel by default. If you have such an installation number and your system uses NUMA and does not work with kernel-xen, deselect the Virtualization option during installation.
- Currently, live migration of fully virtualized guests is not supported on this architecture. In addition, **kexec** and **kdump** are also not supported for virtualization on this architecture.

## 7. Technology Previews

*Technology Preview* features are currently *not* supported under Red Hat Enterprise Linux subscription services, may not be functionally complete, and are generally not suitable for production use. However, these features are included as a customer convenience and to provide the feature with wider exposure.

Customers may find these features useful in a non-production environment. Customers are also free to provide feedback and functionality suggestions for a Technology Preview feature before it becomes fully supported. Erratas will be provided for high-severity security issues.

During the development of a Technology Preview feature, additional components may become available to the public for testing. It is the intention of Red Hat to fully support Technology Preview features in a future release.

### ALUA Mode on EMC Clariion

Explicit active-passive failover (ALUA) mode using **dm-multipath** on *EMC Clariion* storage is now available. This mode is provided as per T10 specifications, but is provided in this release only as a technology preview.

For more information about T10, refer to <http://www.t10.org>.

### ext4

The latest generation of the ext filesystem, **ext4**, is available in this release as a Technology Preview. **Ext4** is an incremental improvement on the **ext3** file system developed by Red Hat and the Linux community. The release name of the file system for the Technology Preview is **ext4dev**.

The file system is provided by the **ext4dev.ko** kernel module, and a new **e4fsprogs** package, which contains updated versions of the familiar **e2fsprogs** administrative tools for use with ext4. To use, install **e4fsprogs** and then use commands like **mkfs.ext4dev** from the **e4fsprogs** program to create an ext4-base file system. When referring to the filesystem on a mount commandline or fstab file, use the filesystem name **ext4dev**.



## FreeIPMI

*FreeIPMI* is now included in this update as a Technology Preview. FreeIPMI is a collection of Intelligent Platform Management IPMI system software. It provides in-band and out-of-band software, along with a development library conforming to the Intelligent Platform Management Interface (IPMI v1.5 and v2.0) standards.

For more information about FreeIPMI, refer to <http://www.gnu.org/software/freeipmi/>

## TrouSerS and tpm-tools

*TrouSerS* and **tpm-tools** are included in this release to enable use of *Trusted Platform Module* (TPM) hardware. TPM hardware features include (among others):

- Creation, storage, and use of RSA keys securely (without being exposed in memory)
- Verification of a platform's software state using cryptographic hashes

*TrouSerS* is an implementation of the Trusted Computing Group's Software Stack (TSS) specification. You can use *TrouSerS* to write applications that make use of TPM hardware. **tpm-tools** is a suite of tools used to manage and utilize TPM hardware.

For more information about *TrouSerS*, refer to <http://trousers.sourceforge.net/>.

## eCryptfs

**eCryptfs** is a stacked cryptographic file system for Linux. It mounts on individual directories in existing mounted lower file systems such as EXT3; there is no need to change existing partitions or file systems in order to start using **eCryptfs**.

With this release, **eCryptfs** has been re-based to upstream version 56, which provides several bug fixes and enhancements. In addition, this update provides a graphical program to help configure **eCryptfs** (**ecryptfs-mount-helper-gui**).

This update also changes the syntax of certain **eCryptfs** mount options. If you choose to update to this version of **eCryptfs**, you should update any affected mount scripts and **/etc/fstab** entries. For information about these changes, refer to **man** **ecryptfs**.

The following caveats apply to this release of **eCryptfs**:

- Note that the **eCryptfs** file system will only work properly if the encrypted file system is mounted once over the underlying directory of the same name. For example:

```
mount -t ecryptfs /mnt/secret /mnt/secret
```

The secured portion of the file system should not be exposed, i.e. it should not be mounted to other mount points, bind mounts, and the like.

- **eCryptfs** mounts on networked file systems (e.g. NFS, Samba) will not work properly.
- This version of the **eCryptfs** kernel driver requires updated userspace, which is provided by **ecryptfs-utils-56-4.el5** or newer.

For more information about **eCryptfs**, refer to <http://ecryptfs.sf.net>. You can also refer to <http://ecryptfs.sourceforge.net/README> and <http://ecryptfs.sourceforge.net/ecryptfs-faq.html> for basic setup information.

## Stateless Linux

Stateless Linux is a new way of thinking about how a system should be run and managed, designed to simplify provisioning and management of large numbers of systems by making them easily replaceable. This is accomplished primarily by establishing prepared system images which get replicated and managed across a large number of stateless systems, running the operating system in a read-only manner (refer to `/etc/sysconfig/readonly-root` for more details).

In its current state of development, the Stateless features are subsets of the intended goals. As such, the capability remains as Technology Preview.

Red Hat recommends that those interested in testing stateless code read the HOWTO at <http://fedoraproject.org/wiki/StatelessLinux/HOWTO> and join [stateless-list@redhat.com](mailto:stateless-list@redhat.com).

The enabling infrastructure pieces for Stateless Linux were originally introduced in Red Hat Enterprise Linux 5.

## AIGLX

*AIGLX* is a Technology Preview feature of the otherwise fully supported X server. It aims to enable GL-accelerated effects on a standard desktop. The project consists of the following:

- ▶ A lightly modified X server.
- ▶ An updated Mesa package that adds new protocol support.

By installing these components, you can have GL-accelerated effects on your desktop with very few changes, as well as the ability to enable and disable them at will without replacing your X server. AIGLX also enables remote GLX applications to take advantage of hardware GLX acceleration.

## FireWire

The **firewire-sbp2** module is still included in this update as a Technology Preview. This module enables connectivity with FireWire storage devices and scanners.

At present, FireWire does not support the following:

- ▶ IPv4
- ▶ *pcilynx* host controllers
- ▶ multi-LUN storage devices
- ▶ non-exclusive access to storage devices

In addition, the following issues still exist in FireWire:

- ▶ a memory leak in the **SBP2** driver may cause the machine to become unresponsive.
- ▶ a code in this version does not work properly in big-endian machines. This could lead to unexpected behavior in PowerPC.

## ktune

This release includes **ktune** (from the **ktune** package), a service that sets several kernel tuning parameters to values suitable for specific system profiles. Currently, **ktune** only provides a profile for large-memory systems running disk-intensive and network-intensive applications.

The settings provided by **ktune** do not override those set in `/etc/sysctl.conf` or through

the kernel command line. **ktune** may not be suitable on some systems and workloads; as such, you should test it comprehensively before deploying to production.

You can disable any configuration set by **ktune** and revert to your normal settings by simply stopping the **ktune** service using **service ktune stop** (as root).

### SGPIO Support for dmraid

Serial General Purpose Input Output (SGPIO) is an industry standard communication method used between a main board and a variety of internal and external hard disk drive bay enclosures. This method can be used to control LED lights on an enclosure through the AHCI driver interface.

In this release, SGPIO support in **dmraid** is included as a technology preview. This will allow **dmraid** to work properly with disk enclosures.

### GCC 4.3

The *Gnu Compiler Collection version 4.3 (GCC4.3)* is now included in this release as a Technology Preview. This collection of compilers include C, C++, and Fortran 95 compilers along with support libraries.

Note that in the **gcc43** packages, the default for the **gnu89-inline** option has been changed to **-fgnu89-inline**, whereas upstream and future updates of Red Hat Enterprise Linux 5 will default to **-fno-gnu89-inline**. This is necessary because many headers shipped as part of Red Hat Enterprise Linux 5 expect GNU in-line semantics instead of ISO C99 semantics. These headers have not been adjusted to request GNU in-line semantics through attributes.

### Kernel Tracepoint Facility

In this update, a new kernel marker/tracepoint facility has been implemented as a Technology Preview. This interface adds static probe points into the kernel, for use with tools such as **SystemTap**.

### Device Failure Monitoring of RAID sets

Device Failure Monitoring, using the tools **dmraid** and **dmevent\_tool**, is included in Red Hat Enterprise Linux 5.3 as a Technology Preview. This provides the ability to watch and report device failures on component devices of RAID sets.

### DFS

Starting with Red Hat Enterprise Linux 5.3, CIFS supports Distributed File System (DFS) as a Technology Preview.

## 8. Resolved Issues

### 8.1. All Architectures

- The data for TTY device activity reports was not generating correctly. Consequently, the command **sar -y** failed, returning the error:

Requested activities not available in file

In this updated package, `sar` has been corrected so the `-y` option outputs the TTY device activity.

- Previously, setting `max_fds` to **unlimited** in `/etc/multipath.conf` would prevent the **multipathd** daemon from starting. If number of open file descriptors needs to be set to the system maximum, `max_fds` should be set to **max**.
- **mod\_perl** is now re-based to version 2.0.4, the latest upstream release. This update applies several updates, which include a bug fix that now allows **mod\_perl** to work properly with **Bugzilla 3.0**.
- **cups** is now re-based to version 1.3.7. This update applies several bug fixes and enhancements, including:
  - Kerberos authentication is now supported.
  - User-defined printer and job policies are now loaded correctly.
  - Remote queue caches are no longer loaded when browsing is disabled.
  - The **classes.conf** configuration file now has correct file permissions.
- **lm\_sensors** has been re-based to version 2.10.7. This update applies several upstream enhancements and bug fixes, including a fix that prevents **libsensors** from crashing with a **General parse error** message when **k8temp** is also loaded.
- **elfutils** has been updated in this release to address the following bugs:
  - The **eu-readelf** utility could crash when reading certain input files.
  - The **eu-strip** utility is used in the **rpmbuild** procedures that create new binary packages. It separates debugging information from executable code, to make **-debuginfo** packages. A bug in this utility resulted in unusable debugging information for ET\_REL files on the s390 platform; this affects Linux kernel module files (**.ko.debug**), and caused the generated **kernel-debuginfo** packages not to work with Systemtap on s390.
- **vnc-server** is now re-based to version 4.1.2-14.el5. This update applies the following fixes:
  - A bug that prevented **vncserver** from printing error messages when **Xvnc** failed to start is now fixed.
  - **Xvnc** no longer uses the wrong root window depth; it now uses the correct window depth specified by the **-depth** option.
  - A bug that causes the **libvnc.so** module to crash the X server is now fixed.
  - **Xvnc** now supports GLX and RENDER extensions on all architectures.
- **smartmontools** has been re-based to version 5.38. This update improves autodetection of hardware devices, improves support for CCISS RAID arrays, and features a larger database of supported devices.  
 This update also fixes a bug wherein SELinux prevented **smartmontools** from monitoring **3ware** RAID devices. **smartmontools** can now monitor such devices properly.
- **python-urlgrabber** has been re-based to version 3.1.0-5. This applies several bug fixes from upstream, including:
  - **yum** can now correctly re-download from a **yum** repository that does not support partial downloads.
  - **yum** can now resume an interrupted download even if the **yum** repository is FTP-based with a specified port.
  - The size of progress bars are now dynamic to the terminal width. In addition, progress bars are now cleaner, and display a percentage of the total downloaded data.
  - The **keepalive** signal of **python-urlgrabber** is now fixed. Previously, a bug in this signal incorrectly increased memory usage during downloads; in addition, this bug also prevented

**reposync** and **yumdownloader** from performing properly when downloading a large number of packages.

- ▶ **yum-utils** is now re-based to upstream version 1.1.16. This applies several bug fixes, including:
  - **yum update --security** can now properly locate old relevant security updates.
  - **yum-versionlock** now works properly against package obsoletes.

This update also includes the **yum-fastestmirror** plugin, which enables **yum** to choose the fastest repository in a mirrorlist.

- ▶ **Samba** has been re-based to upstream version 3.2.0. This fixes several bugs, including one that prevented users from joining domains that used *Windows 2003* as their name server. This update also fixes a bug that caused **samba** domain membership to break after changing the system password using **net rpc changetrustpw**.

For a more comprehensive list of upstream **samba** updates included this release, refer to

<http://www.samba.org/samba/history/samba-3.0.32.html>

- ▶ **OpenLDAP** has been re-based to upstream version 2.3.43. This applies several upstream bug fixes, including:
  - The **init** script now reports a warning if the **slapd** daemon cannot read a TLS certificate file.
  - All libraries in **openldap-debuginfo** package are now unstripped.
  - Uninstalling the **openldap-devel** package no longer breaks **OpenLDAP** libraries.

Red Hat now distributes additional overlays for OpenLDAP server. Except for **syncprov**, all overlays can be found in separate **openldap-servers-overlays** packages, compiled as dynamically loadable modules. The **syncprov** overlay is statically linked to the **OpenLDAP** server to maintain compatibility with older **OpenLDAP** releases.

- ▶ Because the **xterm** binary had the set group ID (**setgid**) bit configured, certain environmental variables (such as **LD\_LIBRARY\_PATH** and **TMPDIR**) were unset. In this release, the **xterm** binary now has mode **0755** permissions configured, which resolves this issue.
- ▶ The recommended method for balancing the load on NIS servers when multiple machines are connecting with **ybind** has changed with this release. The **ybind** daemon's behavior has not changed: it still pings all NIS servers listed in the **/etc/ybind** configuration file and then binds to the single fastest-responding server. Before, it was recommended to list all available NIS servers in each machine's **/etc/ybind.conf** configuration file. However, because even servers under high load can respond quickly to this ping, thus inadvertently increasing their own load, it is now recommended for administrators to list a smaller number of available NIS servers in each machine's **ybind.conf**, and to vary this list across machines. In this way, NIS servers are automatically load-balanced due to not every NIS server being listed as being available to every machine.
- ▶ **OpenMotif** has been re-based to upstream version 2.3.1. This update applies several bug fixes, including:
  - A bug in the way **OpenMotif** handled the **Grab** and **Ungrab** events is now fixed. In previous releases, this bug could cause the display to lock.
  - A bug in **nedit** could cause it to crash when using the **nedit** graphical user interface. This was caused by a function in the code that causes a segmentation fault in some cases of item selection, which is now fixed.
- ▶ **dbus** has been re-based to version 1.1.2. This update fixes a bug wherein multi-threaded programs could cause a deadlock in **dbus**. In previous releases, as one thread listened to **dbus** and processed messages, the second thread would send messages to **dbus**.
- ▶ **strace** has been re-based to version 4.5.18. This fixes several bugs, including:
  - A bug that caused **strace** to crash when the **-f** option was used on some multi-threaded programs (particularly on 64-bit systems) is now fixed.
  - A bug that prevented the 64-bit version of **strace** from executing a **vfork()** function call on a

32-bit process is now fixed.

- **cpuspeed** has been updated to version 1.2.1-5. With this update, the **cpuspeed init** script now loads the **speedstep-centrino** module if all other module loads fail. In addition, a user-space bug that prevented the **Powernow-k8** module from loading is now fixed.
- The **frysk** suite of tools have been removed completely from this distribution. **frysk** was originally introduced as a technology preview in Red Hat Enterprise Linux 5.0.
- Previously, the partition I/O statistics provided by the **iostat -x** command were incomplete. In this update, partition statistics are now calculated in the same manner as disk statistics, providing coherent and comprehensive I/O statistics at the partition level.
- A password disclosure flaw was found with configuration file for the **Dovecot** mail server. If a system had the **ssl\_key\_password** option defined, any local user could view the SSL key password. (CVE-2008-4870)



### Note

This flaw did not allow the attacker to acquire the contents of the SSL key. The password has no value without the key file which arbitrary users should not have read access to.

To better protect even this value, however, the **dovecot.conf** file now supports the `!include_try` directive. The **ssl\_key\_password** option should be moved from **dovecot.conf** to a new file owned by, and only readable and writable by, root (ie 0600). This file should be referenced from **dovecot.conf** by setting the `!include_try /path/to/password/file` option.

## 8.2. x86\_64 Architectures

- **ksh** has been re-based to version 2008-02-02. This update adds multi-byte character handling, addresses many job control problems and applies several bug fixes from upstream. Note that this update to **ksh** preserves compatibility for existing scripts.

## 8.3. s390x Architectures

- A **vmconvert** bug prevented it from working properly on the **vmur** device node (`/dev/0.0.000c`). This caused **vmconvert** to fail when attempting to access dumps on the **vmur** device with the error **vmconvert: Open dump file failed! (Permission denied)**. An update to **s390utils** in this release fixes this issue.
- The **init** script and **config** file for the **mon\_procd** daemon and **mon\_fsstatd** daemon were missing from the **s390utils** package. Consequently these daemons could not be built and used. The missing files have been added in this update which resolves this issue.

## 8.4. PowerPC Architectures

- A bug that prevented the **ehci\_hcd** module from reloading on this architecture is now fixed. This ensures that the *Belkin 4-port PCI-Express USB Lily* adapter (and other similar devices) now function properly with Red Hat Enterprise Linux 5 when they use the **ehci\_hcd** module.
- The **libhugetlbfs** library is now re-based to version 1.3. This update applies several upstream improvements to the library, thereby improving the performance of applications that use Huge pages. For a complete list of updates to **libhugetlbfs**, refer to the following link:

[http://sourceforge.net/mailarchive/message.php?msg\\_name=20080515170754\\_GA1830%40us.ibm.com](http://sourceforge.net/mailarchive/message.php?msg_name=20080515170754_GA1830%40us.ibm.com)

## 9. Known Issues

### 9.1. All Architectures

- When using the new disk encryption feature to encrypt the root filesystem, the following error message will be reported on the console when shutting down the system:

```
Stopping disk encryption [FAILED]
```

This message can safely be ignored, the shutdown process will complete successfully.

- When using an encrypted device, the following error message may be reported during bootup:

```
insmod: error inserting '/lib/aes_generic.ko': -1 File exists
```

This message can safely be ignored.

- Installation using a Multiple Device (MD) RAID on top of multipath will result in a machine that cannot boot. Multipath to Storage Area Network (SAN) devices which provide RAID internally are not affected.
- When a large number of LUNs are added to a node, multipath can significantly increase the time it takes for udev to create device nodes for them. If you experience this problem, you can correct it by deleting the following line in `/etc/udev/rules.d/40-multipath.rules`:

```
KERNEL!="dm-[0-9]*", ACTION=="add", PROGRAM=="/bin/bash -c '/sbin/lsmode |  
/bin/grep ^dm_multipath'", RUN+="/sbin/multipath -v0 %M:%m"
```

This line causes udev to run multipath every time a block device is added to the node. Even with this line removed, multipathd will still automatically create multipath devices, and multipath will still be called during the boot process, for nodes with multipathed root filesystems. The only change is that multipath devices will not be automatically created when multipathd is not running, which should not be a problem for the vast majority of multipath users.

- When upgrading from an earlier version of Red Hat Enterprise Linux to 5.3, you may encounter the following error:

```
Updating : mypackage ##### [ 472/1655]  
rpmdb: unable to lock mutex: Invalid argument
```

The cause of the locking issue is that the shared futex locking in glibc was enhanced with per-process futexes between 5.2 and 5.3. As a result, programs running against the 5.2 glibc can not properly perform shared futex locking against programs running with the 5.3 glibc.

This particular error message is a side effect of a package calling rpm as part of its install scripts. The rpm instance performing the upgrade is using the prior glibc throughout the upgrade, but the rpm instance launched from within the script is using the new glibc.

To avoid this error, upgrade glibc first in a separate run:

```
# yum update glibc  
# yum update
```

You will also see this error if you downgrade glibc to an earlier version on an installed 5.3 system.

- mvapich** and **mvapich2** in Red Hat Enterprise Linux 5 are compiled to support only *InfiniBand/iWARP* interconnects. Consequently, they will not run over ethernet or other network interconnects.
- On systems with more than two encrypted block devices, anaconda has a option to provide a global



passphrase. The init scripts, however, do not support this feature. When booting the system, entering each individual passphrase for all encrypted devices will be required.

- When upgrading **openmpi** using **yum**, the following warning may be returned:

```
cannot open `/tmp/openmpi-upgrade-version.*' for reading: No such file or directory
```

The message is harmless and can be safely ignored.

- Configuring IRQ SMP affinity has no effect on some devices that use message signalled interrupts (MSI) with no MSI per-vector masking capability. Examples of such devices include *Broadcom NetXtreme* Ethernet devices that use the **bnx2** driver.

If you need to configure IRQ affinity for such a device, disable MSI by creating a file in **/etc/modprobe.d/** containing the following line:

```
options bnx2 disable_msi=1
```

Alternatively, you can disable MSI completely using the kernel boot parameter **pci=noms**.

- A bug in the updated **/etc/udev/rules.d/50-udev.rules** file prevents the creation of persistent names for tape devices with numbers higher than 9 in their names. For example, a persistent name will not be created for a tape device with a name of **nst12**.

To work around this, add an asterisk (\*) after each occurrence of the string **nst[0-9]** in **/etc/udev/rules.d/50-udev.rules**.

- The **smartctl** tool cannot properly read SMART parameters from SATA devices.
- A bug in previous versions of **openmpi** and **lam** may prevent you from upgrading these packages. This bug manifests in the following error (when attempting to upgrade **openmpi** or **lam**:

```
error: %preun(openmpi-[version]) scriptlet failed, exit status 2
```

As such, you need to manually remove older versions of **openmpi** and **lam** in order to install their latest versions. To do so, use the following **rpm** command:

```
rpm -qa | grep '^openmpi-|^lam-' | xargs rpm -e --noscripts --allmatches
```

- When using **dm-multipath**, if features **"1 queue\_if\_no\_path"** is specified in **/etc/multipath.conf** then any process that issues I/O will hang until one or more paths are restored.

To avoid this, set **no\_path\_retry [N]** in **/etc/multipath.conf** (where **[N]** is the number of times the system should retry a path). When you do, remove the features **"1 queue\_if\_no\_path"** option from **/etc/multipath.conf** as well.

If you need to use **"1 queue\_if\_no\_path"** and experience the issue noted here, use **dmsetup** to edit the policy at runtime for a particular LUN (i.e. for which all the paths are unavailable).

To illustrate: run **dmsetup message [device] 0 "fail\_if\_no\_path"**, where **[device]** is the multipath device name (e.g. **mpath2**; do not specify the path) for which you want to change the policy from **"queue\_if\_no\_path"** to **"fail\_if\_no\_path"**.

- Enabling multiple installed versions of the same kernel module is not supported. In addition to this, a bug in the way kernel module versions are parsed can sometimes result in enabling an older version of the same kernel module.

Red Hat recommends that when you install a newer version of an installed kernel module, you should delete the older one first.

- Executing **kdump** on an *IBM Bladecenter QS21* or *QS22* configured with NFS root will fail. To avoid this, specify an NFS dump target in **/etc/kdump.conf**.



- ▶ *IBM T60* laptops will power off completely when suspended and plugged into a docking station. To avoid this, boot the system with the argument **acpi\_sleep=s3\_bios**.
- ▶ The *QLogic iSCSI Expansion Card* for the *IBM Bladecenter* provides both ethernet and iSCSI functions. Some parts on the card are shared by both functions. However, the current **qla3xxx** and **qla4xxx** drivers support ethernet and iSCSI functions individually. Both drivers do not support the use of ethernet and iSCSI functions simultaneously.

Because of this limitation, successive resets (via consecutive **ifdown/ifup** commands) may hang the device. To avoid this, allow a 10-second interval after an **ifup** before issuing an **ifdown**. Also, allow the same 10-second interval after an **ifdown** before issuing an **ifup**. This interval allows ample time to stabilize and re-initialize all functions when an **ifup** is issued.

- ▶ Laptops equipped with the *Cisco Aironet MPI-350* wireless may hang trying to get a DHCP address during any network-based installation using the wired ethernet port.

To work around this, use local media for your installation. Alternatively, you can disable the wireless card in the laptop BIOS prior to installation (you can re-enable the wireless card after completing the installation).

- ▶ Boot-time logging to **/var/log/boot.log** is not available in Red Hat Enterprise Linux 5.3.
- ▶ The system may not successfully reboot into a **kexec/kdump** kernel if X is running and using a driver other than *vesa*. This problem only exists with *ATI Rage XL* graphics chipsets.  
If X is running on a system equipped with *ATI Rage XL*, ensure that it is using the *vesa* driver in order to successfully reboot into a **kexec/kdump** kernel.
- ▶ When using Red Hat Enterprise Linux 5.2 on a machine with an *nVidia CK804* chipset installed, the following kernel messages may appear:

```
kernel: assign_interrupt_mode Found MSI capability
kernel: pcie_portdrv_probe->Dev[005d:10de] has invalid IRQ. Check vendor BIOS
```

These messages indicate that certain PCI-E ports are not requesting IRQs. They do not, however, affect the operation of the machine in any way.

- ▶ Removable storage devices (such as CDs and DVDs) do not automatically mount when you are logged in as root. As such, you will need to manually mount the device through the graphical file manager.

Alternatively, you can run the following command to mount a device to **/media**:

```
mount /dev/[device name] /media
```

- ▶ When a LUN is deleted on a configured storage system, the change is not reflected on the host. In such cases, **lvm** commands will hang indefinitely when **dm-multipath** is used, as the LUN has now become *stale*.

To work around this, delete all device and **mpath** link entries in **/etc/lvm/.cache** specific to the stale LUN.

To find out what these entries are, run the following command:

```
ls -l /dev/mpath | grep [stale LUN]
```

For example, if [*stale LUN*] is 3600d0230003414f30000203a7bc41a00, the following results may appear:

```
lrwxrwxrwx 1 root root 7 Aug  2 10:33 /3600d0230003414f30000203a7bc41a00 ->
../dm-4
lrwxrwxrwx 1 root root 7 Aug  2 10:33 /3600d0230003414f30000203a7bc41a00p1 ->
../dm-5
```

This means that 3600d0230003414f30000203a7bc41a00 is mapped to two **mpath** links: **dm-4** and **dm-5**.

As such, the following lines should be deleted from **/etc/lvm/.cache**:

```
/dev/dm-4
/dev/dm-5
/dev/mapper/3600d0230003414f30000203a7bc41a00
/dev/mapper/3600d0230003414f30000203a7bc41a00p1
/dev/mpath/3600d0230003414f30000203a7bc41a00
/dev/mpath/3600d0230003414f30000203a7bc41a00p1
```

- ▶ Running the **multipath** command with the **-ll** option can cause the command to hang if one of the paths is on a blocking device. Note that the driver does not fail a request after some time if the device does not respond.

This is caused by the cleanup code, which waits until the path checker request either completes or fails. To display the current **multipath** state without hanging the command, use **multipath -l** instead.

- ▶ Upgrading **pm-utils** from a Red Hat Enterprise Linux 5.2 Beta version of **pm-utils** will fail, resulting in the following error:

```
error: unpacking of archive failed on file /etc/pm/sleep.d: cpio: rename
```

To prevent this from occurring, delete the **/etc/pm/sleep.d/** directory prior to upgrading. If **/etc/pm/sleep.d** contains any files, move those files to **/etc/pm/hooks/**.

- ▶ Hardware testing for the *Mellanox MT25204* has revealed that an internal error occurs under certain high-load conditions. When the **ib\_mthca** driver reports a catastrophic error on this hardware, it is usually related to an insufficient completion queue depth relative to the number of outstanding work requests generated by the user application.

Although the driver will reset the hardware and recover from such an event, all existing connections at the time of the error will be lost. This generally results in a segmentation fault in the user application. Further, if **opensm** is running at the time the error occurs, then you need to manually restart it in order to resume proper operation.

- ▶ When installing Red Hat Enterprise Linux 5 on a guest, the guest is configured to explicitly use a temporary installation kernel provided by **dom0**. Once installation finishes, it can then use its own bootloader. However, this can only be achieved by forcing the guest's first reboot to be a shutdown. As such, when the **Reboot** button appears at the end of the guest installation, clicking it shuts down the guest, but does not reboot it. This is an expected behavior.

Note that when you boot the guest after this it will then use its own bootloader.

- ▶ Running **rpmbuild** on the **compiz** source RPM will fail if any KDE or **qt** development packages (for example, **qt-devel**) are installed. This is caused by a bug in the **compiz** configuration script. To work around this, remove any KDE or **qt** development packages before attempting to build the **compiz** package from its source RPM.
  - ▶ If your system has either *ATI Radeon R500* or *R600* graphics card equipped, **firstboot** will not run after installation. The system will go directly to the graphical login screen and skip **firstboot** altogether. If you attempt to run **firstboot** manually (i.e. from a failsafe terminal), the X session will crash.
- This issue is caused by the driver used by the *ATI Radeon R500/R600* hardware. The default driver used by these graphics cards are still in technology preview. To work around this, backup your **/etc/X11/xorg.conf** file; then, configure X to use the supported **vesa** driver instead using the following command:

**system-config-display --reconfig --set-driver=vesa**

You can now run **firstboot**. To switch back to your old settings, restore your original **/etc/X11/xorg.conf**.

- If your system uses the TSC timer, the **gettimeofday** system call may move backwards. This is because of an overflow issue that causes the TSC timer to jump forward significantly in some cases; when this occurs, the TSC timer will correct itself, but will ultimately register a movement backwards in time.

This issue is particularly critical for time-sensitive systems, such as those used for transaction systems and databases. As such, if your system needs precision timing, Red Hat strongly recommends that you set the kernel to use another timer (for example, HPET).

- Attempting to run **sniff** may result in an error. This is because some required packages are not installed with **dogtail**.

To prevent this from occurring, install the following packages manually:

- **libsvg2**
- **ghostscript-fonts**
- **pygtk2-libglade**
- *Thin Provisioning* (also known as "virtual provisioning") will be first released with *EMC Symmetrix DMX3* and *DMX4*. Please refer to the *EMC Support Matrix* and *Symmetrix Enginuity* code release notes for further details.
- In **/etc/multipath.conf**, setting **max\_fds** to **unlimited** will prevent the **multipathd** daemon from starting up properly. As such, you should use a sufficiently high value instead for this setting.
- SystemTap currently uses GCC to probe user-space events. GCC is, however, unable to provide debuggers with precise location list information for parameters. In some cases, GCC also fails to provide visibility on some parameters. As a consequence, SystemTap scripts that probe user-space may return inaccurate readings.
- The *IBM T41* laptop model does not enter **Suspend Mode** properly; as such, **Suspend Mode** will still consume battery life as normal. This is because Red Hat Enterprise Linux 5 does not yet include the **radeonfb** module.

To work around this, add a script named **hal-system-power-suspend** to **/usr/share/hal/scripts/** containing the following lines:

```
chvt 1
radeontool light off
radeontool dac off
```

This script will ensure that the *IBM T41* laptop enters **Suspend Mode** properly. To ensure that the system resumes normal operations properly, add the script **restore-after-standby** to the same directory as well, containing the following lines:

```
radeontool dac on
radeontool light on
chvt 7
```

- If the **edac** module is loaded, BIOS memory reporting will not work. This is because the **edac** module clears the register that the BIOS uses for reporting memory errors.

The current Red Hat Enterprise Linux Driver Update Model instructs the kernel to load all available modules (including the **edac** module) by default. If you wish to ensure BIOS memory reporting on your system, you need to manually blacklist the **edac** modules. To do so, add the following lines to

**/etc/modprobe.conf:**

```
blacklist edac_mc
blacklist i5000_edac
blacklist i3000_edac
blacklist e752x_edac
```

- Red Hat Enterprise Linux 5.3 can detect online growing or shrinking of an underlying block device. However, there is no method to automatically detect that a device has changed size, so manual steps are required to recognize this and resize any file systems which reside on the given device(s). When a resized block device is detected, a message like the following will appear in the system logs:

```
VFS: busy inodes on changed media or resized disk sdi
```

If the block device was grown, then this message can be safely ignored. However, if the block device was shrunk without shrinking any data set on the block device first, the data residing on the device may be corrupted.

It is only possible to do an online resize of a filesystem that was created on the entire LUN (or block device). If there is a partition table on the block device, then the file system will have to be unmounted to update the partition table.

- If your system has a GFS2 file system mounted, a node may hang if a cached inode is accessed in one node and unlinked on a different node. When this occurs, the hung node will be unavailable until you fence and recover it via the normal cluster recovery mechanism. The function calls **gfs2\_dinode\_dealloc** and **shrink\_dcache\_memory** will also appear in the stack traces of any processes stuck in the hung node.

This issue does not affect single-node GFS2 file systems.

- The following message may be encountered during system boot:

```
Could not detect stabilization, waiting 10 seconds.
Reading all physical volumes. This may take a while...
```

This delay (which may be up to 10 seconds, dependant on the hardware configuration) is necessary to ensure that the kernel has completed scanning the disks.

- The current implementation of **User Payload Access** in **ipmitool** allows you to configure devices, but does not allow you to retrieve the current settings for those devices.
- Using the **swap --grow** parameter in a kickstart file without setting the **--maxsize** parameter at the same time makes anaconda impose a restriction on the maximum size of the swap partition. It does not allow it to grow to fill the device.

For systems with less than 2GB of physical memory, the imposed limit is twice the amount of physical memory. For systems with more than 2GB, the imposed limit is the size of physical memory plus 2GB.

- The **gfs2\_convert** program may not free up all blocks from the GFS metadata that are no longer used under GFS2. These unused metadata blocks will be discovered and freed the next time **gfs2\_fsck** is run on the file system. It is recommended that **gfs2\_fsck** be run after the filesystem has been converted to free the unused blocks. These unused blocks will be flagged by **gfs2\_fsck** with messages such as:

```
Ondisk and fsck bitmaps differ at block 137 (0x89)
Ondisk status is 1 (Data) but FSCK thinks it should be 0 (Free)
Metadata type is 0 (free)
```

These messages do not indicate corruption in the GFS2 file system, they indicate blocks that should

have been freed, but were not. The number of blocks needing to be freed will vary depending on the size of the file system and block size. Many file systems will not encounter this issue at all. Large file systems may have a small number of blocks (typically less than 100).

## 9.2. x86 Architectures

- ▶ When running the bare-metal (non-Virtualized) kernel, the X server may not be able to retrieve **EDID** information from the monitor. When this occurs, the graphics driver will be unable to display resolutions higher than 800x600.

To work around this, add the following line to the **ServerLayout** section of **/etc/X11/xorg.conf**:

```
Option "Int10Backend" "x86emu"
```

- ▶ Recording needs to be manually enabled on *Dell M4300* and *M6300*. To do this, perform the following steps:
  1. Open **alsamixer**.
  2. Press **Tab** to toggle **[Capture]** in the **View** field (located at the upper left part of the menu).
  3. Press the **Space** bar.
  4. To verify that recording is enabled, the text above the **ADCMux** field should display **L R CAPTUR**.
- ▶ If encryption is enabled on the boot device during system installation, the following message will be logged during system boot:

```
padlock: VIA PadLock not detected.
```

This message can safely be ignored.

## 9.3. x86\_64 Architectures

- ▶ Some machines that use *NVIDIA* graphics cards may display corrupted graphics or fonts when using the graphical installer or during a graphical login. To work around this, switch to a virtual console and back to the original X host.
- ▶ On an *IBM T61* laptop, Red Hat recommends that you refrain from clicking the **glxgears** window (when **glxgears** is run). Doing so can lock the system.

To prevent this from occurring, disable the tiling feature. To do so, add the following line in the **Device** section of **/etc/X11/xorg.conf**:

```
Option "Tiling" "0"
```

- ▶ Recording needs to be manually enabled on *Dell M4300* and *M6300*. To do this, perform the following steps:
  1. Open **alsamixer**.
  2. Press **Tab** to toggle **[Capture]** in the **View** field (located at the upper left part of the menu).
  3. Press the **Space** bar.
  4. To verify that recording is enabled, the text above the **ADCMux** field should display **L R CAPTUR**.
- ▶ If your system uses an *Intel 945GM* graphics card, do not use the **i810** driver. You should use the default **intel** driver instead.

- On dual-GPU laptops, if one of the graphics chips is Intel-based, the Intel graphics mode cannot drive any external digital connections (including HDMI, DVI, and DisplayPort). This is a hardware limitation of the Intel GPU. If you require external digital connections, configure the system to use the discrete graphics chip (in the BIOS).

## 9.4. PowerPC Architectures

- When using **Alt-SysRq-W** to debug, the following warning message will appear:

```
Badness in smp_call_function at arch/powerpc/kernel/smp.c:223
```

Afterwards, the system will also warn that it will hang. This message should be ignored as it will not cause the system to hang.

- Recording needs to be manually enabled on *Dell M4300* and *M6300*. To do this, perform the following steps:
  1. Open **alsamixer**.
  2. Press **Tab** to toggle **[Capture]** in the **View** field (located at the upper left part of the menu).
  3. Press the **Space** bar.
  4. To verify that recording is enabled, the text above the **ADCMux** field should display **L R CAPTUR**.
- The size of the PPC kernel image is too large for OpenFirmware to support. Consequently, network booting will fail, resulting in the following error message:

```
Please wait, loading kernel...
/pci@80000000f8000000/ide@4,1/disk@0:2,vmlinux-anaconda: No such file or
directory
boot:
```

To work around this:

1. Boot to the OpenFirmware prompt, by pressing the '8' key when the IBM splash screen is displayed.
2. Run the following command:

```
setenv real-base 2000000
```

3. Boot into System Management Services (SMS) with the command:

```
0> dev /packages/gui obe
```

## 9.5. s390x Architectures

- When running Red Hat Enterprise Linux 5.2 on a z/VM that has more than 2GB of guest storage defined, invalid data can be read from and written to any FCP and OSA device attached in QDIO mode with the Queued-I/O assist (QIOASSIST) option enabled. If your system has any such devices attached, Red Hat recommends that you download and install the corresponding z/VM Program Temporary Fix (PTF) from the following link:  
<http://www-1.ibm.com/support/docview.wss?uid=isg1VM64306>
- It is not possible to directly read and convert a z/VM dump into a file. Instead, you should first copy the dump from the z/VM reader into a Linux file system using **vmur** and convert the dump into a Linux-readable file using **vmconvert**.
- The *IBM System z* does not provide a traditional Unix-style physical console. As such, Red Hat

Enterprise Linux 5.2 for the *IBM System z* does not support the *firstboot* functionality during initial program load.

To properly initialize setup for Red Hat Enterprise Linux 5.2 on the *IBM System z*, run the following commands after installation:

- `/usr/bin/setup` — provided by the **setuptools** package.
- `/usr/bin/rhn_register` — provided by the **rhn-setup** package.

## 9.6. ia64 Architecture

- Some *Itanium* systems cannot properly produce console output from the **kexec purgatory** code. This code contains instructions for backing up the first 640k of memory after a crash.

While **purgatory** console output can be useful in diagnosing problems, it is not needed for **kdump** to properly function. As such, if your *Itanium* system resets during a **kdump** operation, disable console output in **purgatory** by adding `--noio` to the **KEXEC\_ARGS** variable in `/etc/sysconfig/kdump`.

- Running **perftest** will fail if different CPU speeds are detected. As such, you should disable CPU speed scaling before running **perftest**.
- When the **kdump** kernel is booted, the following error will appear in the boot log:

```
mknod: /tmp/initrd.[numbers]/dev/efirtc: No such file or directory
```

This error results from a malformed request to create the **efirtc** in an incorrect path. However, the device path in question is also created statically in the **initramfs** when the **kdump** service is started. As such, the run-time creation of the device node is redundant, harmless, and should not affect the performance of **kdump**.

- Some systems may be unable to boot the **kdump** kernel properly. In such cases, use the **machvec=dig** kernel parameter.
- Recording needs to be manually enabled on *Dell M4300* and *M6300*. To do this, perform the following steps:
  1. Open **alsamixer**.
  2. Press **Tab** to toggle **[Capture]** in the **View** field (located at the upper left part of the menu).
  3. Press the **Space** bar.
  4. To verify that recording is enabled, the text above the **ADCMux** field should display **L R CAPTUR**.
- On Intel *Itanium*-based systems running SELinux in enforcing mode, either the **allow\_unconfined\_execmem\_dyntrans** or **allow\_execmem** Booleans must be turned on to allow the IA-32 Execution Layer (the **ia32el** service) to operate correctly. If the **allow\_unconfined\_execmem\_dyntrans** Boolean is off, but the **allow\_execmem** Boolean is on, which it is by default in Red Hat Enterprise Linux 5, the **ia32el** service supports 32-bit emulation; however, if both Booleans are off, emulation fails.

## 10. Added Packages

### **cmirror-1.1.36-1.el5**

- Group: **System Environment/Base**
- Summary: **cmirror - The Cluster Mirror Package**
- Description:

cmirror - Cluster Mirroring

### cmirror-kmod-0.1.21-10.el5

- › Group: **System Environment/Kernel**
- › Summary: **cmirror kernel modules**
- › Description:

cmirror-kmod - The Cluster Mirror kernel modules

### compat-libcom\_err-1.0-7

- › Group: **System Environment/Libraries**
- › Summary: **A libcom\_err compatibility library**
- › Description:

The compat-libcom\_err package contains libcom\_err.so.3, which may be required by applications which were built against older packages of MIT Kerberos.

### crash-spu-commands-1.1-1

- › Group: **Development/Debuggers**
- › Summary: **Cell/B.E. SPU commands extension for crash**
- › Description:

Specific commands for debugging SPU run control data using crash.

### dapl-2.0.13-4.el5

- › Group: **System Environment/Libraries**
- › Summary: **Library providing access to the DAT 1.2 and 2.0 APIs**
- › Description:

libdat and libdapl provide a userspace implementation of the DAT 1.2 and 2.0 API that is built to natively support InfiniBand/iWARP network technology.

### dstat-0.6.6-3.el5

- › Group: **System Environment/Base**
- › Summary: **Versatile resource statistics tool**
- › Description:



Dstat is a versatile replacement for vmstat, iostat, netstat and ifstat. Dstat overcomes some of their limitations and adds some extra features, more counters and flexibility. Dstat is handy for monitoring systems during performance tuning tests, benchmarks or troubleshooting.

Dstat allows you to view all of your system resources instantly, you can eg. compare disk usage in combination with interrupts from your IDE controller, or compare the network bandwidth numbers directly with the disk throughput (in the same interval).

Dstat gives you detailed selective information in columns and clearly indicates in what magnitude and unit the output is displayed. Less confusion, less mistakes.

### **e4fsprogs-1.41.1-2.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **Utilities for managing the fourth extended (ext4) filesystem**
- ▶ Description:

The e4fsprogs package contains a number of utilities for creating, checking, modifying, and correcting any inconsistencies in the fourth extended (ext4) filesystem. E4fsprogs contains e4fsck (used to repair filesystem inconsistencies after an unclean shutdown), mke4fs (used to initialize a partition to contain an empty ext4 filesystem), debugfs (used to examine the internal structure of a filesystem, to manually repair a corrupted filesystem, or to create test cases for e4fsck), tune4fs (used to modify filesystem parameters), and most of the other core ext4fs filesystem utilities.

Please note that "e4fsprogs" simply contains renamed static binaries from the equivalent upstream e2fsprogs release; it is packaged this way for Red Hat Enterprise Linux 5 to ensure that the many changes included for ext4 do not destabilize the core e2fsprogs in RHEL5.

You should install the e4fsprogs package if you need to manage the performance of an ext4 filesystem.

### **ecryptfs-utils-56-8.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **The eCryptfs mount helper and support libraries**
- ▶ Description:

eCryptfs is a stacked cryptographic filesystem that ships in the Linux kernel. This package provides the mount helper and supporting libraries to perform key management and mount functions.

Install ecryptfs-utils if you would like to mount eCryptfs.

### **fipscheck-1.0.3-1.el5**

- Group: **System Environment/Libraries**
- Summary: **A library for integrity verification of FIPS validated modules**
- Description:

FIPSCheck is a library for integrity verification of FIPS validated modules. The package also provides helper binaries for creation and verification of the HMAC-SHA256 checksum files.

### **freeipmi-0.5.1-6.el5**

- Group: **Applications/System**
- Summary: **FreeIPMI**
- Description:

The FreeIPMI project provides "Remote-Console" (out-of-band) and "System Management Software" (in-band) based on Intelligent Platform Management Interface specification.

This package contains a Technology Preview for FreeIPMI. Please visit <http://www.redhat.com/support/service/> for details on the Red Hat support policies.

### **gcc43-4.3.2-7.el5**

- Group: **Development/Languages**
- Summary: **Preview of GCC version 4.3**
- Description:

The gcc43 package contains preview the GNU Compiler Collection version 4.3.

### **gtk-vnc-0.3.2-3.el5**

- Group: **Development/Libraries**
- Summary: **A GTK widget for VNC clients**
- Description:

gtk-vnc is a VNC viewer widget for GTK. It is built using coroutines allowing it to be completely asynchronous while remaining single threaded.

### **ibsim-0.4-3.el5**

- Group: **System Environment/Libraries**
- Summary: **InfiniBand fabric simulator for management**
- Description:

ibsim provides simulation of infiniband fabric for using with OFA OpenSM, diagnostic and management tools.

### **infiniband-diags-1.4.1-2.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **OpenFabrics Alliance InfiniBand Diagnostic Tools**
- ▶ Description:

This package provides IB diagnostic programs and scripts needed to diagnose an IB subnet.

### **isns-utils-0.91-0.1.el5**

- ▶ Group: **System Environment/Daemons**
- ▶ Summary: **The iSNS daemon and utility programs**
- ▶ Description:

The iSNS package contains the daemon and tools to setup a iSNS server, and iSNS client tools. The Internet Storage Name Service (iSNS) protocol allows automated discovery, management and configuration of iSCSI and Fibre Channel devices (using iFCP gateways) on a TCP/IP network.

### **java-1.6.0-openjdk-1.6.0.0-0.25.b09.el5**

- ▶ Group: **Development/Languages**
- ▶ Summary: **OpenJDK Runtime Environment**
- ▶ Description:

The OpenJDK runtime environment.

### **ktune-0.2-3.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **Server performance tuning service**
- ▶ Description:

ktune provides settings for server performance tuning. Please have a look at /etc/sysconfig/ktune and /etc/sysctl.ktune for tuning parameters.

### **libcmpiutil-0.4-2.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **CMPI Utility Library**
- ▶ Description:

Libcmptutil is a library of utility functions for CMPI providers. The goal is to reduce the amount of repetitive work done in most CMPI providers by encapsulating common procedures with more "normal" APIs. This extends from operations like getting typed instance properties to standardizing method dispatch and argument checking.

### **libcxgb3-1.2.2-1.el5**

- Group: **System Environment/Libraries**
- Summary: **Chelsio T3 iWARP HCA Userspace Driver**
- Description:

Userspace hardware driver for use with the libibverbs InfiniBand/iWARP verbs library. This driver enables Chelsio iWARP capable ethernet devices.

### **libehca-1.2-2.el5**

- Group: **System Environment/Libraries**
- Summary: **IBM InfiniBand HCA Userspace Driver**
- Description:

IBM hardware driver for use with libibverbs user space verbs access library.

### **libibcm-1.0.3-1.el5**

- Group: **System Environment/Libraries**
- Summary: **Userspace InfiniBand Communication Manager.**
- Description:

libibcm provides a userspace InfiniBand Communication Management library.

### **libibcommon-1.1.1-1.el5**

- Group: **System Environment/Libraries**
- Summary: **OpenFabrics Alliance InfiniBand management common library**
- Description:

libibcommon provides common utility functions for the OFA diagnostic and management tools.

### **libibmad-1.2.1-1.el5**

- Group: **System Environment/Libraries**
- Summary: **OpenFabrics Alliance InfiniBand MAD library**
- Description:

libibmad provides low layer IB functions for use by the IB diagnostic and management programs. These include MAD, SA, SMP, and other basic IB functions.

#### **libibumad-1.2.1-1.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **OpenFabrics Alliance InfiniBand umad (user MAD) library**
- ▶ Description:

libibumad provides the user MAD library functions which sit on top of the user MAD modules in the kernel. These are used by the IB diagnostic and management tools, including OpenSM.

#### **libibverbs-1.1.2-1.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **Library providing access to InfiniBand/iWARP hardware verbs protocol**
- ▶ Description:

libibverbs is a library that allows userspace processes to use InfiniBand/iWARP "verbs" as described in the InfiniBand Architecture Specification. This includes direct hardware access for fast path operations.

For this library to be useful, a device-specific plug-in module should also be installed.

#### **libipathverbs-1.1-11.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **QLogic InfiniPath HCA Userspace Driver**
- ▶ Description:

QLogic hardware driver for use with libibverbs user space verbs access library. This driver supports QLogic InfiniPath based cards.

#### **libmlx4-1.0-4.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **Mellanox ConnectX InfiniBand HCA Userspace Driver**
- ▶ Description:

Mellanox hardware driver for use with libibverbs user space verbs access library. This driver supports Mellanox ConnectX architecture cards.

#### **libmthca-1.0.5-1.el5**

- Group: **System Environment/Libraries**
- Summary: **Mellanox InfiniBand HCA Userspace Driver**
- Description:

Mellanox hardware driver for use with libibverbs user space verbs access library. This driver supports Mellanox based Single Data Rate and Dual Data Rate cards, including those from Cisco, Topspin, and Voltaire. It does not support the Connect-X architecture based Quad Data Rate cards (libmlx4 handles that hardware).

### **libnes-0.5-4.e15**

- Group: **System Environment/Libraries**
- Summary: **NetEffect RNIC Userspace Driver**
- Description:

Userspace hardware driver for use with the libibverbs InfiniBand/iWARP verbs library. This driver enables NetEffect iWARP capable ethernet devices.

### **librdmacm-1.0.8-1.e15**

- Group: **System Environment/Libraries**
- Summary: **Userspace RDMA Connection Manager.**
- Description:

librdmacm provides a userspace RDMA Communication Managment API.

### **libsdp-1.1.99-10.e15\_2**

- Group: **System Environment/Libraries**
- Summary: **A library for direct userspace use of Sockets Direct Protocol**
- Description:

libsdp is an LD\_PRELOAD-able library that can be used to have existing applications use InfiniBand Sockets Direct Protocol (SDP) instead of TCP sockets, transparently and without recompilation. For information on how to configure libsdp, see libsdp.conf, which is installed in \$(sysconfdir) (usually /usr/local/etc or /etc).

### **libsmi-0.4.5-2.e15**

- Group: **System Environment/Libraries**
- Summary: **A library to access SMI MIB information**
- Description:

Libsmi is a C library to access MIB module information through a well defined API that hides the nasty details of locating and parsing SMIV1/v2 MIB modules.

This package contains tools to check, dump, and convert MIB definitions and a steadily maintained and revised archive of all IETF and IANA maintained standard MIB modules.

### **libspe2-2.2.80.121-4.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **SPE Runtime Management Library**
- ▶ Description:

SPE Runtime Management Library for the Cell Broadband Engine Architecture.

### **libvirt-cim-0.5.1-4.el5**

- ▶ Group: **Development/Libraries**
- ▶ Summary: **A CIM provider for libvirt**
- ▶ Description:

Libvirt-cim is a CMPI CIM provider that implements the DMTF SVPC virtualization model. The goal is to support most of the features exported by libvirt itself, enabling management of multiple platforms with a single provider.

### **mpi-selector-1.0.1-1.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **Provides site-wide and per-user MPI implementation selection**
- ▶ Description:

A simple tool that allows system administrators to set a site-wide default for which MPI implementation is to be used, but also allow users to set their own default MPI implementation, thereby overriding the site-wide default.

The default can be changed easily via the mpi-selector command -- editing of shell startup files is not required.

### **mpitests-3.0-2.el5**

- ▶ Group: **Applications**
- ▶ Summary: **MPI Benchmarks and tests**
- ▶ Description:

Set of popular MPI benchmarks:  
 IMB-2.3  
 Presta-1.4.0  
 OSU benchmarks ver 2.2

### mstflint-1.3-1.el5

- » Group: **Applications/System**
- » Summary: **Mellanox firmware burning tool**
- » Description:

This package contains a burning tool for Mellanox manufactured HCA cards. It also provides access to the relevant source code.

### mvapich-1.1.0-0.2931.3.el5

- » Group: **Development/Libraries**
- » Summary: **MPI implementation over Infiniband RDMA-enabled interconnect**
- » Description:

This is high performance and scalable MPI-1 implementation over Infiniband and RDMA-enabled interconnect. This implementation is based on MPICH and MVICH. MVAPICH is pronounced as `em-vah-pich`.

### mvapich2-1.0.3-3.el5

- » Group: **Development/Libraries**
- » Summary: **OSU MVAPICH2 MPI package**
- » Description:

This is an MPI-2 implementation which includes all MPI-1 features. It is based on MPICH2 and MVICH.

### nedit-5.5-21.el5

- » Group: **Applications/Editors**
- » Summary: **A GUI text editor for systems with X**
- » Description:

NEdit is a GUI text editor for the X Window System. NEdit is very easy to use, especially if you are familiar with the Macintosh(TM) or Microsoft(TM) Windows(TM) style of interface.

### nspluginwrapper-0.9.91.5-22.el5

- » Group: **Networking/WWW**



- » Summary: **A compatibility layer for Netscape 4 plugins**
- » Description:

nspluginwrapper makes it possible to use Netscape 4 compatible plugins compiled for ppc into Mozilla for another architecture, e.g. x86\_64.

This package consists in:

- \* npviewer: the plugin viewer
- \* npwrapper.so: the browser-side plugin
- \* mozilla-plugin-config: a tool to manage plugins installation and update

### **ofed-docs-1.3.2-0.20080728.0355.1.el5**

- » Group: **Documentation/Man**
- » Summary: **OpenFabrics Enterprise Distribution documentation**
- » Description:

Documentation from OFED 1.3

### **opensm-3.2.2-3.el5**

- » Group: **System Environment/Daemons**
- » Summary: **OpenIB InfiniBand Subnet Manager and management utilities**
- » Description:

OpenSM is the OpenIB project's Subnet Manager for Infiniband networks. The subnet manager is run as a system daemon on one of the machines in the infiniband fabric to manage the fabric's routing state. This package also contains various tools for diagnosing and testing Infiniband networks that can be used from any machine and do not need to be run on a machine running the opensm daemon.

### **openswan-2.6.14-1.el5\_2.1**

- » Group: **System Environment/Daemons**
- » Summary: **Openswan IPSEC implementation**
- » Description:

Openswan is a free implementation of IPSEC & IKE for Linux. IPSEC is the Internet Protocol Security and uses strong cryptography to provide both authentication and encryption services. These services allow you to build secure tunnels through untrusted networks. Everything passing through the untrusted net is encrypted by the ipsec gateway machine and decrypted by the gateway at the other end of the tunnel. The resulting tunnel is a virtual private network or VPN.

This package contains the daemons and userland tools for setting up Openswan on a freeswan enabled kernel.

**perftest-1.2-11.el5**

- » Group: **Productivity/Networking/Diagnostic**
- » Summary: **IB Performance tests**
- » Description:

gen2 uverbs microbenchmarks

**perl-Archive-Zip-1.16-1.2.1**

- » Group: **Development/Libraries**
- » Summary: **Perl library for accessing Zip archives**
- » Description:

The Archive::Zip module allows a Perl program to create, manipulate, read, and write Zip archive files. Zip archives can be created, or you can read from existing zip files. Once created, they can be written to files, streams, or strings. Members can be added, removed, extracted, replaced, rearranged, and enumerated. They can also be renamed or have their dates, comments, or other attributes queried or modified. Their data can be compressed or uncompressed as needed. Members can be created from members in existing Zip files, or from existing directories, files, or strings.

**perl-Config-General-2.40-1.el5**

- » Group: **Development/Libraries**
- » Summary: **Generic configuration module for Perl**
- » Description:

This module opens a config file and parses it's contents for you. After parsing the module returns a hash structure which contains the representation of the config file. The format of config files supported by Config::General is inspired by the well known apache config format, in fact, this module is 100% read-compatible to apache configs, but you can also just use simple name/value pairs in your config files. In addition to the capabilities of a apache config file it supports some enhancements such as here-documents, C- style comments or multiline options. It is also possible to save the config back to disk, which makes the module a perfect backend for configuration interfaces. It is possible to use variables in config files and there exists also support for object oriented access to the configuration.

**pexpect-2.3-1.el5**

- » Group: **Development/Languages**
- » Summary: **Pure Python Expect-like module**
- » Description:

Pexpect is a pure Python module for spawning child applications; controlling them; and responding to expected patterns in their output. Pexpect works like Don Libes' Expect. Pexpect allows your script to spawn a child application and control it as if a human were typing commands.

Pexpect can be used for automating interactive applications such as ssh, ftp, passwd, telnet, etc. It can be used to automate setup scripts for duplicating software package installations on different servers. And it can be used for automated software testing. Pexpect is in the spirit of Don Libes' Expect, but Pexpect is pure Python. Unlike other Expect-like modules for Python, Pexpect does not require TCL or Expect nor does it require C extensions to be compiled. It should work on any platform that supports the standard Python pty module.

#### **python-iniparse-0.2.3-4.el5**

- » Group: **Development/Libraries**
- » Summary: **Python Module for Accessing and Modifying Configuration Data in INI files**
- » Description:

iniparse is an INI parser for Python which is API compatible with the standard library's ConfigParser, preserves structure of INI files (order of sections & options, indentation, comments, and blank lines are preserved when data is updated), and is more convenient to use.

#### **python-setuptools-0.6c5-2.el5**

- » Group: **Development/Languages**
- » Summary: **Download, build, install, upgrade, and uninstall Python packages**
- » Description:

setuptools is a collection of enhancements to the Python distutils that allow you to more easily build and distribute Python packages, especially ones that have dependencies on other packages.

#### **qlvnictools-0.0.1-10.el5**

- » Group: **System Environment/Base**
- » Summary: **VNIC ULP service**

» Description:

VNIC ULP service

### qperf-0.4.1-2.el5

» Group: **Networking/Diagnostic**

» Summary: **Measure socket and RDMA performance**

» Description:

Measure socket and RDMA performance.

### rsyslog-2.0.6-1.el5

» Group: **System Environment/Daemons**

» Summary: **Enhanced system logging and kernel message trapping daemons**

» Description:

Rsyslog is an enhanced multi-threaded syslogd supporting, among others, MySQL, syslog/tcp, RFC 3195, permitted sender lists, filtering on any message part, and fine grain output format control. It is quite compatible to stock syslogd and can be used as a drop-in replacement. Its advanced features make it suitable for enterprise-class, encryption protected syslog relay chains while at the same time being very easy to setup for the novice user.

### setroubleshoot-plugins-2.0.4-2.el5

» Group: **Applications/System**

» Summary: **Analysis plugins for use with setroubleshoot**

» Description:

This package provides a set of analysis plugins for use with setroubleshoot. Each plugin has the capacity to analyze SELinux AVC data and system data to provide user friendly reports describing how to interpret SELinux AVC denials.

### sgpio-1.2.0\_10-2.el5

» Group: **System Environment/Base**

» Summary: **SGPIO captive backplane tool**

» Description:

Intel SGPIO enclosure management utility

This package contains (part of) a Technology Preview for Application for AHCI driver with SGPIO support.

Please visit <http://www.redhat.com/support/service/> for details on the Red Hat support policies.

### **srptools-0.0.4-2.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **Tools for using the InfiniBand SRP protocol devices**
- ▶ Description:

In conjunction with the kernel `ib_srp` driver, `srptools` allows you to discover and use SCSI devices via the SCSI RDMA Protocol over InfiniBand.

### **system-config-netboot-0.1.45.1-1.el5**

- ▶ Group: **Applications/System**
- ▶ Summary: **network booting/install configuration utility (GUI)**
- ▶ Description:

`system-config-netboot` is a utility which allows you to configure diskless environments and network installations.

### **tpm-tools-1.3.1-1.el5**

- ▶ Group: **Applications/System**
- ▶ Summary: **Management tools for the TPM hardware**
- ▶ Description:

`tpm-tools` is a group of tools to manage and utilize the Trusted Computing Group's TPM hardware. TPM hardware can create, store and use RSA keys securely (without ever being exposed in memory), verify a platform's software state using cryptographic hashes and more.

### **trousers-0.3.1-4.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **TCG's Software Stack v1.2**
- ▶ Description:

TrouSerS is an implementation of the Trusted Computing Group's Software Stack (TSS) specification. You can use TrouSerS to write applications that make use of your TPM hardware. TPM hardware can create, store and use RSA keys securely (without ever being exposed in memory), verify a platform's software state using cryptographic hashes and more.

### tvflash-0.9.0-2.el5

- Group: **Applications/System**
- Summary: **Tool to manage Mellanox HCA firmware flash memory**
- Description:

tvflash is used to query and update the firmware flash memory attached to Mellanox InfiniBand HCAs.

### udftools-1.0.0b3-0.1.el5

- Group: **Applications/Archiving**
- Summary: **Linux UDF Filesystem userspace utilities**
- Description:

Linux UDF Filesystem userspace utilities.

### virt-viewer-0.0.2-2.el5

- Group: **Applications/System**
- Summary: **Virtual Machine Viewer**
- Description:

Virtual Machine Viewer provides a graphical console client for connecting to virtual machines. It uses the GTK-VNC widget to provide the display, and libvirt for looking up VNC server details.

### wacomexpresskeys-0.4.1-1.el5

- Group: **System Environment/Base**
- Summary: **Wacom ExpressKeys and Touch Strips configuration utility**
- Description:

Configuration utility to bind Wacom tablet's ExpressKeys and Touch Strips to generate other input events.

### wdaemon-0.14-2

- Group: **User Interface/X Hardware Support**
- Summary: **Hotplug helper for Wacom X.org driver**
- Description:

Helper application which emulates persistent input devices for Wacom tablets so they can be plugged and unplugged while X.org server is running. This should go away as soon X.org properly supports hotplugging.

#### **xulrunner-1.9.0.5-1.el5\_2**

- Group: **Applications/Internet**
- Summary: **XUL Runtime for Gecko Applications**
- Description:

XULRunner provides the XUL Runtime environment for Gecko applications.

#### **yum-updatesd-0.9-2.el5**

- Group: **System Environment/Base**
- Summary: **Update notification daemon**
- Description:

yum-updatesd provides a daemon which checks for available updates and can notify you when they are available via email, syslog or dbus.

## **11. Dropped Packages**

#### **cachefilesd-0.8-2.el5**

- Group: **System Environment/Daemons**
- Summary: **CacheFiles userspace management daemon**
- Description:

The cachefilesd daemon manages the caching files and directory that are that are used by network filesystems such as AFS and NFS to do persistent caching to the local disk.

#### **frysk-0.0.1.2007.06.21.rh2-4.el5**

- Group: **Development/System**
- Summary: **Frysk execution analysis tool**
- Description:

Frysk is an execution-analysis technology implemented using native Java and C++.

It is aimed at providing developers and sysadmins with the ability to both examine and analyze running multi-host, multi-process, multi-threaded systems.

Frysk allows the monitoring of running processes and threads, of locking primitives and will also expose deadlocks, gather data and debug any given process in the system.

### **gfs2-kmod-1.52-1.16.el5**

- » Group: **System Environment/Kernel**
- » Summary: **gfs2 kernel module**
- » Description:

GFS2 - The GFS2 filesystem provided for RHEL5.

### **sysreport-1.4.3-13.el5**

- » Group: **Development/Debuggers**
- » Summary: **Gathers system hardware and configuration information.**
- » Description:

Sysreport is a utility that gathers information about a system's hardware and configuration. The information can then be used for diagnostic purposes and debugging. Sysreport is commonly used to help support technicians and developers by providing a "snapshot" of a system's current layout.

## **12. Updated Packages**

### **Cluster\_Administration-5.1.0-7 - Cluster\_Administration-5.2-1**

- » Group: **Documentation**
- » Summary: **Red Hat Cluster for Red Hat Enterprise Linux**
- » Description:

Configuring and Managing a Red Hat Cluster describes the configuration and management of Red Hat cluster systems for Red Hat Enterprise Linux 5.2 It does not include information about Red Hat Linux Virtual Servers (LVS). Information about installing and configuring LVS is in a separate document.

- » No added dependencies
- » No removed dependencies



**Deployment\_Guide-5.1.0-11 - Deployment\_Guide-5.2-11**

- Group: **Documentation**
- Summary: **Deployment Guide**
- Description:

This Deployment Guide documents relevant information regarding the deployment, configuration and administration of Red Hat Enterprise Linux 5.2.

- No added dependencies
- No removed dependencies

**Global\_File\_System-5.1.0-6 - Global\_File\_System-5.2-1**

- Group: **Documentation**
- Summary: **Red Hat Global File System**
- Description:

This book provides information about installing, configuring, and maintaining Red Hat GFS (Red Hat Global File System) for Red Hat Enterprise Linux 5.2.

- No added dependencies
- No removed dependencies

**ImageMagick-6.2.8.0-3.el5.4 - ImageMagick-6.2.8.0-4.el5\_1.1**

- Group: **Applications/Multimedia**
- Summary: **An X application for displaying and manipulating images.**
- Description:

ImageMagick(TM) is an image display and manipulation tool for the X Window System. ImageMagick can read and write JPEG, TIFF, PNM, GIF, and Photo CD image formats. It can resize, rotate, sharpen, color reduce, or add special effects to an image, and when finished you can either save the completed work in the original format or a different one. ImageMagick also includes command line programs for creating animated or transparent .gifs, creating composite images, creating thumbnail images, and more.

ImageMagick is one of your choices if you need a program to manipulate and display images. If you want to develop your own applications which use ImageMagick code or APIs, you need to install ImageMagick-devel as well.

- No added dependencies
- No removed dependencies

**NetworkManager-0.6.4-6.el5 - NetworkManager-0.7.0-3.el5**

- Group: **System Environment/Base**

- » Summary: **Network connection manager and user applications**
- » Description:

NetworkManager attempts to keep an active network connection available at all times. It is intended only for the desktop use-case, and is not intended for usage on servers. The point of NetworkManager is to make networking configuration and setup as painless and automatic as possible. If using DHCP, NetworkManager is intended to replace default routes, obtain IP addresses from a DHCP server, and change nameservers whenever it sees fit.

- » Added Dependencies:
  - autoconf
  - automake
  - dbus-devel >= 1.1
  - dbus-glib-devel >= 0.73-6
  - dhclient
  - doxygen
  - gtk-doc
  - intltool
  - libdaemon-devel
  - libnotify-devel >= 0.4.2
  - libtool
  - nss-devel >= 3.11.7
  - perl(XML::Parser)
  - ppp >= 2.2.4
  - wireless-tools-devel >= 1:28-2
- » Removed Dependencies:
  - dbus-devel >= 0.90
  - dbus-glib-devel >= 0.70
  - dhcdd
  - gnome-panel-devel
  - libgnomeui-devel
  - libnl-devel
  - libnotify-devel >= 0.3
  - perl-XML-Parser
  - wireless-tools-devel >= 1:28-0pre9

#### **ORBit2-2.14.3-4.el5 - ORBit2-2.14.3-5.el5**

- » Group: **System Environment/Daemons**
- » Summary: **A high-performance CORBA Object Request Broker**
- » Description:

ORBit is a high-performance CORBA (Common Object Request Broker Architecture) ORB (object request broker). It allows programs to send requests and receive replies from other programs, regardless of the locations of the two programs. CORBA is an architecture that enables communication between program objects, regardless of the programming language they're written in or the operating system they run on.

You will need to install this package and ORBit-devel if you want to write programs that use CORBA technology.

- ▶ No added dependencies
- ▶ No removed dependencies

### **OpenIPMI-2.0.6-5.el5.4 - OpenIPMI-2.0.6-11.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **OpenIPMI (Intelligent Platform Management Interface) library and tools**
- ▶ Description:

The Open IPMI project aims to develop an open code base to allow access to platform information using Intelligent Platform Management Interface (IPMI).  
This package contains the tools of the OpenIPMI project.

- ▶ No added dependencies
- ▶ No removed dependencies

### **SysVinit-2.86-14 - SysVinit-2.86-15.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **Programs which control basic system processes.**
- ▶ Description:

The SysVinit package contains a group of processes that control the very basic functions of your system. SysVinit includes the init program, the first program started by the Linux kernel when the system boots. Init then controls the startup, running, and shutdown of all other programs.

- ▶ No added dependencies
- ▶ No removed dependencies

### **Virtualization-5.1.0-12 - Virtualization-5.2-11**

- ▶ Group: **Documentation**
- ▶ Summary: **Virtualization Guide**
- ▶ Description:

The Red Hat Enterprise Linux Virtualization Guide contains information on installation, configuring, administering, tips, tricks and troubleshooting virtualization technologies used in Red Hat Enterprise Linux.

- » No added dependencies
- » No removed dependencies

#### **a2ps-4.13b-57.1.el5 - a2ps-4.13b-57.2.el5**

- » Group: **Applications/Publishing**
- » Summary: **Converts text and other types of files to PostScript(TM).**
- » Description:

The a2ps filter converts text and other types of files to PostScript(TM). A2ps has pretty-printing capabilities and includes support for a wide number of programming languages, encodings (ISO Latins, Cyrillic, etc.), and medias.

- » Added Dependencies:
  - psutils
- » No removed dependencies

#### **acl-2.2.39-2.1.el5 - acl-2.2.39-3.el5**

- » Group: **System Environment/Base**
- » Summary: **Access control list utilities.**
- » Description:

This package contains the getfacl and setfacl utilities needed for manipulating access control lists.

- » No added dependencies
- » No removed dependencies

#### **acpid-1.0.4-5 - acpid-1.0.4-7.el5**

- » Group: **System Environment/Daemons**
- » Summary: **ACPI Event Daemon**
- » Description:

acpid is a daemon that dispatches ACPI events to user-space programs.

- » No added dependencies
- » No removed dependencies

#### **alsa-lib-1.0.14-1.rc4.el5 - alsa-lib-1.0.17-1.el5**

- » Group: **System Environment/Libraries**

- Summary: **The Advanced Linux Sound Architecture (ALSA) library.**
- Description:

The Advanced Linux Sound Architecture (ALSA) provides audio and MIDI functionality to the Linux operating system.

This package includes the ALSA runtime libraries to simplify application programming and provide higher level functionality as well as support for the older OSS API, providing binary compatibility for most OSS programs.

- No added dependencies
- No removed dependencies

#### **alsa-utils-1.0.14-2.rc4.el5 - alsa-utils-1.0.17-1.el5**

- Group: **Applications/Multimedia**
- Summary: **Advanced Linux Sound Architecture (ALSA) utilities**
- Description:

This package contains command line utilities for the Advanced Linux Sound Architecture (ALSA).

- Added Dependencies:
  - alsa-lib-devel >= 1.0.17
- Removed Dependencies:
  - alsa-lib-devel >= 1.0.14

#### **amtu-1.0.4-4 - amtu-1.0.6-1.el5**

- Group: **System Environment/Base**
- Summary: **Abstract Machine Test Utility (AMTU)**
- Description:

Abstract Machine Test Utility (AMTU) is an administrative utility to check whether the underlying protection mechanism of the hardware are still being enforced. This is a requirement of the Controlled Access Protection Profile FPT\_AMT.1, see [http://www.radium.ncsc.mil/tpep/library/protection\\_profiles/CAPP-1.d.pdf](http://www.radium.ncsc.mil/tpep/library/protection_profiles/CAPP-1.d.pdf)

- No added dependencies
- No removed dependencies

#### **anaconda-11.1.2.87-1 - anaconda-11.1.2.168-1**

- Group: **Applications/System**
- Summary: **Graphical system installer**

» Description:

The anaconda package contains the program which was used to install your system. These files are of little use on an already installed system.

» Added Dependencies:

- iscsi-initiator-utils >= 6.2.0.868-0.9
- kudzu-devel >= 1.2.57.1.18
- libdhcp-devel >= 1.20-5
- libnl-devel >= 1.0-0.10.pre5.5

» Removed Dependencies:

- glib2-devel >= 2.11.1-5
- kudzu-devel >= 1.2.57.1.15
- libdhcp-devel >= 1.16

### apr-util-1.2.7-6 - apr-util-1.2.7-7.el5

» Group: **System Environment/Libraries**

» Summary: **Apache Portable Runtime Utility library**

» Description:

The mission of the Apache Portable Runtime (APR) is to provide a free library of C data structures and routines. This library contains additional utility interfaces for APR; including support for XML, LDAP, database interfaces, URI parsing and more.

- » No added dependencies
- » No removed dependencies

### at-spi-1.7.11-2.fc6 - at-spi-1.7.11-3.el5

» Group: **System Environment/Libraries**

» Summary: **Assistive Technology Service Provider Interface**

» Description:

at-spi allows assistive technologies to access GTK-based applications. Essentially it exposes the internals of applications for automation, so tools such as screen readers, magnifiers, or even scripting interfaces can query and interact with GUI controls.

- » No added dependencies
- » No removed dependencies

### audit-1.5.5-7.el5 - audit-1.7.7-6.el5

» Group: **System Environment/Daemons**

» Summary: **User space tools for 2.6 kernel auditing**

» Description:

The audit package contains the user space utilities for storing and searching the audit records generate by the audit subsystem in the Linux 2.6 kernel.

- » Added Dependencies:
  - openldap-devel
  - tcp\_wrappers
- » No removed dependencies

#### **authconfig-5.3.12-2.el5 - authconfig-5.3.21-5.el5**

- » Group: **System Environment/Base**
- » Summary: **Command line tool for setting up authentication from network services**
- » Description:

Authconfig is a command line utility which can configure a workstation to use shadow (more secure) passwords. Authconfig can also configure a system to be a client for certain networked user information and authentication schemes.

- » Added Dependencies:
  - python >= 2.4.1
- » Removed Dependencies:
  - python

#### **autofs-5.0.1-0.rc2.55 - autofs-5.0.1-0.rc2.102**

- » Group: **System Environment/Daemons**
- » Summary: **A tool for automatically mounting and unmounting filesystems.**
- » Description:

autofs is a daemon which automatically mounts filesystems when you use them, and unmounts them later when you are not using them. This can include network filesystems, CD-ROMs, floppies, and so forth.

- » No added dependencies
- » No removed dependencies

#### **bash-3.1-16.1 - bash-3.2-24.el5**

- » Group: **System Environment/Shells**
- » Summary: **The GNU Bourne Again shell (bash) version 3.2**
- » Description:

The GNU Bourne Again shell (Bash) is a shell or command language interpreter that is compatible with the Bourne shell (sh). Bash incorporates useful features from the Korn shell (ksh) and the C shell (csh). Most sh scripts can be run by bash without modification. This package (bash) contains bash version 3.2, which improves POSIX compliance over previous versions.

- ▶ Added Dependencies:
  - autoconf
  - gettext
- ▶ No removed dependencies

### **bind-9.3.3-10.el5 - bind-9.3.4-10.P1.el5**

- ▶ Group: **System Environment/Daemons**
- ▶ Summary: **The Berkeley Internet Name Domain (BIND) DNS (Domain Name System) server.**
- ▶ Description:

BIND (Berkeley Internet Name Domain) is an implementation of the DNS (Domain Name System) protocols. BIND includes a DNS server (named), which resolves host names to IP addresses; a resolver library (routines for applications to use when interfacing with DNS); and tools for verifying that the DNS server is operating properly.

- ▶ No added dependencies
- ▶ No removed dependencies

### **binutils-2.17.50.0.6-5.el5 - binutils-2.17.50.0.6-9.el5**

- ▶ Group: **Development/Tools**
- ▶ Summary: **A GNU collection of binary utilities.**
- ▶ Description:

Binutils is a collection of binary utilities, including ar (for creating, modifying and extracting from archives), as (a family of GNU assemblers), gprof (for displaying call graph profile data), ld (the GNU linker), nm (for listing symbols from object files), objcopy (for copying and translating object files), objdump (for displaying information from object files), ranlib (for generating an index for the contents of an archive), size (for listing the section sizes of an object or archive file), strings (for listing printable strings from files), strip (for discarding symbols), and addr2line (for converting addresses to file and line).

- ▶ No added dependencies
- ▶ No removed dependencies

### **bluez-libs-3.7-1 - bluez-libs-3.7-1.1**

- ▶ Group: **System Environment/Libraries**



» Summary: **Bluetooth libraries**

## » Description:

Libraries for use in Bluetooth applications.

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## » No added dependencies

## » No removed dependencies

**bluez-utils-3.7-2 - bluez-utils-3.7-2.2**» Group: **Applications/System**» Summary: **Bluetooth utilities**

## » Description:

Bluetooth utilities (bluez-utils):

- hcitool
- hciattach
- hciconfig
- hcid
- l2ping
- start scripts (Red Hat)
- pcmcia configuration files

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## » Added Dependencies:

- bluez-libs-devel >= 3.7-1.1

## » Removed Dependencies:

- bluez-libs-devel >= 3.7

**booty-0.80.4-5 - booty-0.80.6-5**» Group: **System Environment/Libraries**» Summary: **simple python bootloader config lib**

## » Description:

Small python library for use with bootloader configuration by anaconda and up2date.

## » No added dependencies

## » No removed dependencies

**busybox-1.2.0-3 - busybox-1.2.0-4.el5**» Group: **System Environment/Shells**» Summary: **Statically linked binary providing simplified versions of system commands**

## » Description:

Busybox is a single binary which includes versions of a large number of system commands, including a shell. This package can be very useful for recovering from certain types of system failures, particularly those involving broken shared libraries.

- » No added dependencies
- » No removed dependencies

### **bzip2-1.0.3-3 - bzip2-1.0.3-4.el5\_2**

- » Group: **Applications/File**
- » Summary: **A file compression utility.**
- » Description:

Bzip2 is a freely available, patent-free, high quality data compressor. Bzip2 compresses files to within 10 to 15 percent of the capabilities of the best techniques available. However, bzip2 has the added benefit of being approximately two times faster at compression and six times faster at decompression than those techniques. Bzip2 is not the fastest compression utility, but it does strike a balance between speed and compression capability.

Install bzip2 if you need a compression utility.

- » No added dependencies
- » No removed dependencies

### **cairo-1.2.4-2.el5 - cairo-1.2.4-5.el5**

- » Group: **System Environment/Libraries**
- » Summary: **A vector graphics library**
- » Description:

Cairo is a vector graphics library designed to provide high-quality display and print output. Currently supported output targets include the X Window System, OpenGL (via glitz), in-memory image buffers, and image files (PDF, PostScript, and SVG). Cairo is designed to produce identical output on all output media while taking advantage of display hardware acceleration when available (eg. through the X Render Extension or OpenGL).

- » No added dependencies
- » No removed dependencies

### **ccid-1.0.1-6.el5 - ccid-1.3.8-1.el5**

- » Group: **System Environment/Libraries**
- » Summary: **Generic USB CCID smart card reader driver**
- » Description:

Generic USB CCID (Chip/Smart Card Interface Devices) driver.

- Added Dependencies:
  - pcsc-lite-devel >= 1.3.3
- Removed Dependencies:
  - pcsc-lite-devel >= %{pcsc-lite\_ver}

#### **cdrtools-2.01-10 - cdrtools-2.01-10.7.el5**

- Group: **Applications/System**
- Summary: **A collection of CD/DVD utilities.**
- Description:

cdrtools is a collection of CD/DVD utilities.

- No added dependencies
- No removed dependencies

#### **checkpolicy-1.33.1-2.el5 - checkpolicy-1.33.1-4.el5**

- Group: **Development/System**
- Summary: **SELinux policy compiler**
- Description:

Security-enhanced Linux is a feature of the Linux® kernel and a number of utilities with enhanced security functionality designed to add mandatory access controls to Linux. The Security-enhanced Linux kernel contains new architectural components originally developed to improve the security of the Flask operating system. These architectural components provide general support for the enforcement of many kinds of mandatory access control policies, including those based on the concepts of Type Enforcement®, Role-based Access Control, and Multi-level Security.

This package contains checkpolicy, the SELinux policy compiler. Only required for building policies.

- No added dependencies
- No removed dependencies

#### **chkconfig-1.3.30.1-1 - chkconfig-1.3.30.1-2**

- Group: **System Environment/Base**
- Summary: **A system tool for maintaining the /etc/rc\*.d hierarchy.**
- Description:

Chkconfig is a basic system utility. It updates and queries runlevel information for system services. Chkconfig manipulates the numerous symbolic links in /etc/rc.d, to relieve system administrators of some of the drudgery of manually editing the symbolic links.

- No added dependencies
- No removed dependencies

**clustermmon-0.10.0-5.el5 - clustermmon-0.12.1-2.el5**

- Group: **System Environment/Base**
- Summary: **Monitoring and management of Red Hat Enterprise Linux Cluster Suite**
- Description:

This package contains Red Hat Enterprise Linux Cluster Suite SNMP/CIM module/agent/provider.

- Added Dependencies:
  - cman-devel
- No removed dependencies

**cman-2.0.73-1.el5 - cman-2.0.98-1.el5**

- Group: **System Environment/Base**
- Summary: **cman - The Cluster Manager**
- Description:

cman - The Cluster Manager

- Added Dependencies:
  - kernel-headers
- No removed dependencies

**conga-0.10.0-6.el5 - conga-0.12.1-7.el5**

- Group: **System Environment/Base**
- Summary: **Remote Management System**
- Description:

Conga is a project developing management system for remote stations. It consists of luci, https frontend, and ricci, secure daemon that dispatches incoming messages to underlying management modules.

- No added dependencies
- Removed Dependencies:
  - cman-devel

**control-center-2.16.0-14.el5 - control-center-2.16.0-16.el5**

- Group: **User Interface/Desktops**
- Summary: **GNOME Control Center**
- Description:

GNOME (the GNU Network Object Model Environment) is an attractive and easy-to-use GUI desktop environment. The control-center package provides the GNOME Control Center utilities that allow you to setup and configure your system's GNOME environment (things like the desktop background and theme, the screensaver, system sounds, and mouse behavior).

If you install GNOME, you need to install control-center.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **coolkey-1.1.0-5.el5 - coolkey-1.1.0-6.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **CoolKey PKCS #11 module**
- ▶ Description:

Linux Driver support for the CoolKey and CAC products.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **coreutils-5.97-12.1.el5 - coreutils-5.97-19.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **The GNU core utilities: a set of tools commonly used in shell scripts**
- ▶ Description:

These are the GNU core utilities. This package is the combination of the old GNU fileutils, sh-utils, and textutils packages.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **cpufreq-utils-002-1.1.43.el5 - cpufreq-utils-005-1.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **CPU Frequency changing related utilities**
- ▶ Description:

cpufreq-utils contains several utilities that can be used to control the cpufreq interface provided by the kernel on hardware that supports CPU frequency scaling.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **cpuspeed-1.2.1-1.48.el5 - cpuspeed-1.2.1-5.el5**

- Group: **System Environment/Base**
- Summary: **CPU frequency adjusting daemon**
- Description:

cpuspeed is a daemon that dynamically changes the speed of your processor(s) depending upon its current workload if it is capable (needs Intel Speedstep, AMD PowerNow!, or similar support).

This package also supports enabling cpu frequency scaling via in-kernel governors on Intel Centrino and AMD Athlon64/Opteron platforms.

- No added dependencies
- No removed dependencies

#### **crash-4.0-4.6.1 - crash-4.0-7.2.3**

- Group: **Development/Debuggers**
- Summary: **crash utility for live systems; netdump, diskdump, kdump, LKCD or mcore dumpfiles**
- Description:

The core analysis suite is a self-contained tool that can be used to investigate either live systems, kernel core dumps created from the netdump, diskdump and kdump packages from Red Hat Linux, the mcore kernel patch offered by Mission Critical Linux, or the LKCD kernel patch.

- No added dependencies
- No removed dependencies

#### **createrepo-0.4.4-2.fc6 - createrepo-0.4.11-3.el5**

- Group: **System Environment/Base**
- Summary: **Creates a common metadata repository**
- Description:

This utility will generate a common metadata repository from a directory of rpm packages.

- Added Dependencies:
  - python
- No removed dependencies

#### **crypto-utils-2.3-1 - crypto-utils-2.3-2.el5**

- Group: **Applications/System**
- Summary: **SSL certificate and key management utilities**

## » Description:

This package provides tools for managing and generating SSL certificates and keys.

- » No added dependencies
- » No removed dependencies

**cryptsetup-luks-1.0.3-2.2.el5 - cryptsetup-luks-1.0.3-4.el5**

- » Group: **Applications/System**
- » Summary: **A utility for setting up encrypted filesystems**
- » Description:

This package contains cryptsetup, a utility for setting up encrypted filesystems using Device Mapper and the dm-crypt target.

- » No added dependencies
- » No removed dependencies

**cups-1.2.4-11.14.el5 - cups-1.3.7-8.el5**

- » Group: **System Environment/Daemons**
- » Summary: **Common Unix Printing System**
- » Description:

The Common UNIX Printing System provides a portable printing layer for UNIX® operating systems. It has been developed by Easy Software Products to promote a standard printing solution for all UNIX vendors and users. CUPS provides the System V and Berkeley command-line interfaces.

- » Added Dependencies:
  - avahi-compat-libdns\_sd-devel
  - krb5-devel
- » No removed dependencies

**cyrus-imapd-2.3.7-1.1.el5 - cyrus-imapd-2.3.7-2.el5**

- » Group: **System Environment/Daemons**
- » Summary: **A high-performance mail server with IMAP, POP3, NNTP and SIEVE support**
- » Description:

The cyrus-imapd package contains the core of the Cyrus IMAP server. It is a scaleable enterprise mail system designed for use from small to large enterprise environments using standards-based internet mail technologies.

A full Cyrus IMAP implementation allows a seamless mail and bulletin board environment to be set up across multiple servers. It differs from other IMAP server implementations in that it is run on "sealed" servers, where users are not normally permitted to log in and have no system account on the server. The mailbox database is stored in parts of the filesystem that are private to the Cyrus IMAP server. All user access to mail is through software using the IMAP, POP3 or KPOP protocols. It also includes support for virtual domains, NNTP, mailbox annotations, and much more. The private mailbox database design gives the server large advantages in efficiency, scalability and administratability. Multiple concurrent read/write connections to the same mailbox are permitted. The server supports access control lists on mailboxes and storage quotas on mailbox hierarchies.

The Cyrus IMAP server supports the IMAP4rev1 protocol described in RFC 3501. IMAP4rev1 has been approved as a proposed standard. It supports any authentication mechanism available from the SASL library, imaps/pop3s/nntps (IMAP/POP3/NNTP encrypted using SSL and TLSv1) can be used for security. The server supports single instance store where possible when an email message is addressed to multiple recipients, SIEVE provides server side email filtering.

- » No added dependencies
- » No removed dependencies

#### **dbus-1.0.0-6.e15 - dbus-1.1.2-12.e15**

- » Group: **System Environment/Libraries**
- » Summary: **D-BUS message bus**
- » Description:

D-BUS is a system for sending messages between applications. It is used both for the systemwide message bus service, and as a per-user-login-session messaging facility.

- » Added Dependencies:
  - doxygen
  - libxslt
  - xmlto
- » No removed dependencies

#### **dbus-glib-0.70-5 - dbus-glib-0.73-8.e15**

- » Group: **System Environment/Libraries**
- » Summary: **GLib bindings for D-Bus**
- » Description:



D-Bus add-on library to integrate the standard D-Bus library with the GLib thread abstraction and main loop.

- › No added dependencies
- › No removed dependencies

### **desktop-printing-0.19-20.el5 - desktop-printing-0.19-20.2.el5**

- › Group: **Applications/File**
- › Summary: **Desktop print icon**
- › Description:

Desktop-printing contains egg cups, a program for user print job notification and control.

- › No added dependencies
- › No removed dependencies

### **devhelp-0.12-11.el5 - devhelp-0.12-20.el5**

- › Group: **Development/Tools**
- › Summary: **API document browser**
- › Description:

An API document browser for GNOME 2.

- › Added Dependencies:
  - gecko-devel-unstable >= 1.9
- › Removed Dependencies:
  - gecko-devel = 1.8.0.12

### **device-mapper-1.02.20-1.el5 - device-mapper-1.02.28-2.el5**

- › Group: **System Environment/Base**
- › Summary: **device mapper library**
- › Description:

This package contains the supporting userspace files (libdevmapper and dmsetup) for the device-mapper.

- › No added dependencies
- › No removed dependencies

### **device-mapper-multipath-0.4.7-12.el5 - device-mapper-multipath-0.4.7-23.el5**

- › Group: **System Environment/Base**
- › Summary: **Tools to manage multipath devices using device-mapper.**
- › Description:

device-mapper-multipath provides tools to manage multipath devices by instructing the device-mapper multipath kernel module what to do.  
 The tools are :  
 \* multipath : Scan the system for multipath devices and assemble them.  
 \* multipathd : Detects when paths fail and execs multipath to update things.

- » No added dependencies
- » No removed dependencies

#### dhcdd-2.2-1.el5 - dhcdd-2.2-2.el5

- » Group: **System Environment/Daemons**
- » Summary: **DHCP D-BUS daemon (dhcdd) controls dhclient sessions with D-BUS, stores and presents DHCP options.**
- » Description:

dhcdd provides a D-BUS interface to the ISC dhclient software. The daemon provides access to DHCP configuration operations and stores those options persistently. Other D-BUS applications can receive notifications of changes in the client's DHCP configuration.

- » No added dependencies
- » No removed dependencies

#### dhcp-3.0.5-7.el5 - dhcp-3.0.5-18.el5

- » Group: **System Environment/Daemons**
- » Summary: **DHCP (Dynamic Host Configuration Protocol) server and relay agent.**
- » Description:

DHCP (Dynamic Host Configuration Protocol) is a protocol which allows individual devices on an IP network to get their own network configuration information (IP address, subnetmask, broadcast address, etc.) from a DHCP server. The overall purpose of DHCP is to make it easier to administer a large network. The dhcp package includes the ISC DHCP service and relay agent.

To use DHCP on your network, install a DHCP service (or relay agent), and on clients run a DHCP client daemon. The dhcp package provides the ISC DHCP service and relay agent.

- » No added dependencies
- » No removed dependencies

#### dhcpv6-0.10-33.el5 - dhcpv6-1.0.10-16.el5

- » Group: **System Environment/Daemons**
- » Summary: **DHCPv6 - DHCP server and client for IPv6**

► **Description:**

Implements the Dynamic Host Configuration Protocol (DHCP) for Internet Protocol version 6 (IPv6) networks in accordance with RFC 3315: Dynamic Host Configuration Protocol for IPv6 (DHCPv6). Consists of dhcp6s(8), the server DHCP daemon, and dhcp6r(8), the DHCPv6 relay agent.

Install this package if you want to support dynamic configuration of IPv6 addresses and parameters on your IPv6 network.

► **Added Dependencies:**

- kernel-headers

► **Removed Dependencies:**

- openssl-devel

### **diffstat-1.41-1.2.2 - diffstat-1.41-1.2.3.el5**

► **Group: Development/Tools**

► **Summary: A utility which provides statistics based on the output of diff.**

► **Description:**

The diff command compares files line by line. Diffstat reads the output of the diff command and displays a histogram of the insertions, deletions and modifications in each file. Diffstat is commonly used to provide a summary of the changes in large, complex patch files.

Install diffstat if you need a program which provides a summary of the diff command's output. You'll need to also install diffutils.

► **No added dependencies**

► **No removed dependencies**

### **diffutils-2.8.1-15.2.2 - diffutils-2.8.1-15.2.3.el5**

► **Group: Applications/Text**

► **Summary: A GNU collection of diff utilities.**

► **Description:**

Diffutils includes four utilities: diff, cmp, diff3 and sdiff. Diff compares two files and shows the differences, line by line. The cmp command shows the offset and line numbers where two files differ, or cmp can show the characters that differ between the two files. The diff3 command shows the differences between three files. Diff3 can be used when two people have made independent changes to a common original; diff3 can produce a merged file that contains both sets of changes and warnings about conflicts. The sdiff command can be used to merge two files interactively.

Install diffutils if you need to compare text files.

- » No added dependencies
- » No removed dependencies

#### **dmraid-1.0.0.rc13-4.el5 - dmraid-1.0.0.rc13-33.el5**

- » Group: **System Environment/Base**
- » Summary: **dmraid (Device-mapper RAID tool and library)**
- » Description:

DMRAID supports RAID device discovery, RAID set activation and display of properties for ATARAID on Linux >= 2.4 using device-mapper.

- » No added dependencies
- » No removed dependencies

#### **dnsmasq-2.39-2.el5 - dnsmasq-2.45-1.el5\_2.1**

- » Group: **System Environment/Daemons**
- » Summary: **A lightweight DHCP/caching DNS server**
- » Description:

Dnsmasq is lightweight, easy to configure DNS forwarder and DHCP server. It is designed to provide DNS and, optionally, DHCP, to a small network. It can serve the names of local machines which are not in the global DNS. The DHCP server integrates with the DNS server and allows machines with DHCP-allocated addresses to appear in the DNS with names configured either in each host or in a central configuration file. Dnsmasq supports static and dynamic DHCP leases and BOOTP for network booting of diskless machines.

- » No added dependencies
- » No removed dependencies

#### **dosfstools-2.11-6.2.el5 - dosfstools-2.11-7.el5**

- » Group: **Applications/System**
- » Summary: **Utilities for making and checking MS-DOS FAT filesystems on Linux.**
- » Description:

The dosfstools package includes the mkdosfs and dosfsck utilities, which respectively make and check MS-DOS FAT filesystems on hard drives or on floppies.

- » No added dependencies
- » No removed dependencies

#### **dovecot-1.0-1.2.rc15.el5 - dovecot-1.0.7-7.el5**

- » Group: **System Environment/Daemons**

► **Summary: Dovecot Secure imap server**

► **Description:**

Dovecot is an IMAP server for Linux/UNIX-like systems, written with security primarily in mind. It also contains a small POP3 server. It supports mail in either of maildir or mbox formats.

- No added dependencies
- No removed dependencies

### **dvgrab-2.0-1.2.2 - dvgrab-3.0-1.el5**

► **Group: Applications/Multimedia**

► **Summary: Utility to capture video from a DV camera**

► **Description:**

The dvgrab utility will capture digital video from a DV source on the firewire (IEEE-1394) bus.

- No added dependencies
- No removed dependencies

### **e2fsprogs-1.39-10.el5 - e2fsprogs-1.39-20.el5**

► **Group: System Environment/Base**

► **Summary: Utilities for managing the second and third extended (ext2/ext3) filesystems**

► **Description:**

The e2fsprogs package contains a number of utilities for creating, checking, modifying, and correcting any inconsistencies in second and third extended (ext2/ext3) filesystems. E2fsprogs contains e2fsck (used to repair filesystem inconsistencies after an unclean shutdown), mke2fs (used to initialize a partition to contain an empty ext2 filesystem), debugfs (used to examine the internal structure of a filesystem, to manually repair a corrupted filesystem, or to create test cases for e2fsck), tune2fs (used to modify filesystem parameters), and most of the other core ext2fs filesystem utilities.

You should install the e2fsprogs package if you need to manage the performance of an ext2 and/or ext3 filesystem.

- No added dependencies
- No removed dependencies

### **eclipse-3.2.1-18.el5 - eclipse-3.2.1-19.el5**

► **Group: Text Editors/Integrated Development Environments (IDE)**

- Summary: **An open, extensible IDE**
- Description:

The Eclipse Platform is designed for building integrated development environments (IDEs) that can be used to create applications as diverse as web sites, embedded Java(tm) programs, C++ programs, and Enterprise JavaBeans(tm).

- No added dependencies
- Removed Dependencies:
  - firefox-devel
  - nspr-devel

### ed-0.2-38.2.2 - ed-0.2-39.el5\_2

- Group: **Applications/Text**
- Summary: **The GNU line editor.**
- Description:

Ed is a line-oriented text editor, used to create, display, and modify text files (both interactively and via shell scripts). For most purposes, ed has been replaced in normal usage by full-screen editors (emacs and vi, for example).

Ed was the original UNIX editor, and may be used by some programs. In general, however, you probably don't need to install it and you probably won't use it.

- No added dependencies
- No removed dependencies

### edac-utils-0.9-5.el5 - edac-utils-0.9-6.el5

- Group: **System Environment/Base**
- Summary: **Userspace helper for kernel EDAC drivers**
- Description:

EDAC is the current set of drivers in the Linux kernel that handle detection of ECC errors from memory controllers for most chipsets on i386 and x86\_64 architectures. This userspace component consists of an init script which makes sure EDAC drivers and DIMM labels are loaded at system startup, as well as a library and utility for reporting current error counts from the EDAC sysfs files.

- No added dependencies
- No removed dependencies

### elfutils-0.125-3.el5 - elfutils-0.137-3.el5

- Group: **Development/Tools**
- Summary: **A collection of utilities and DSOs to handle compiled**

## objects

### ► Description:

Elfutils is a collection of utilities, including ld (a linker), nm (for listing symbols from object files), size (for listing the section sizes of an object or archive file), strip (for discarding symbols), readelf (to see the raw ELF file structures), and elflint (to check for well-formed ELF files).

- No added dependencies
- No removed dependencies

## emacs-21.4-19.el5 - emacs-21.4-20.el5

- Group: **Applications/Editors**
- Summary: **GNU Emacs text editor**
- Description:

Emacs is a powerful, customizable, self-documenting, modeless text editor. Emacs contains special code editing features, a scripting language (elisp), and the capability to readmail, news, and more without leaving the editor.

This package provides an emacs binary with support for X windows.

- No added dependencies
- No removed dependencies

## emacspeak-23.0-2.1 - emacspeak-23.0-3.el5

- Group: **Applications/Editors**
- Summary: **emacspeak -- The Complete Audio Desktop**
- Description:

Emacspeak is a speech interface that allows visually impaired users to interact independently and efficiently with the computer. Emacspeak has dramatically changed how the author and hundreds of blind and visually impaired users around the world interact with the personal computer and the Internet. A rich suite of task-oriented speech-enabled tools provides efficient speech-enabled access to the evolving semantic WWW. When combined with Linux running on low-cost PC hardware, Emacspeak/Linux provides a reliable, stable speech-friendly solution that opens up the Internet to visually impaired users around the world.

- No added dependencies
- No removed dependencies

## enscript-1.6.4-4.1.el5 - enscript-1.6.4-4.1.1.el5\_2

- Group: **Applications/Publishing**
- Summary: **A plain ASCII to PostScript converter.**

► Description:

GNU enscript is a free replacement for Adobe's Enscript program. Enscript converts ASCII files to PostScript(TM) and spools generated PostScript output to the specified printer or saves it to a file. Enscript can be extended to handle different output media and includes many options for customizing printouts.

- No added dependencies
- No removed dependencies

#### **esc-1.0.0-32.el5 - esc-1.0.0-39.el5**

- Group: **Applications/Internet**
- Summary: **Enterprise Security Client Smart Card Client**
- Description:

Enterprise Security Client allows the user to enroll and manage their cryptographic smartcards.

- Added Dependencies:
  - xulrunner
  - xulrunner-devel
- No removed dependencies

#### **ethtool-5-1.el5 - ethtool-6-2.el5**

- Group: **Applications/System**
- Summary: **Ethernet settings tool for PCI ethernet cards**
- Description:

This utility allows querying and changing of ethernet card settings, such as speed, port, autonegotiation, and PCI locations.

- No added dependencies
- No removed dependencies

#### **evolution-data-server-1.8.0-25.el5 - evolution-data-server-1.12.3-6.el5\_2.3**

- Group: **System Environment/Libraries**
- Summary: **Backend data server for Evolution**
- Description:

The evolution-data-server package provides a unified backend for programs that work with contacts, tasks, and calendar information.

It was originally developed for Evolution (hence the name), but is now used by other packages.



## » Added Dependencies:

- gtk-doc
- intltool >= 0.35.0
- openldap-evolution-devel
- openssl-devel

## » Removed Dependencies:

- intltool
- openldap-devel >= 2.0.11

**file-4.17-9.0.1.el5 - file-4.17-15**» Group: **Applications/File**» Summary: **A utility for determining file types.**

## » Description:

The `file` command is used to identify a particular file according to the type of data contained by the file. File can identify many different file types, including ELF binaries, system libraries, RPM packages, and different graphics formats.

You should install the file package, since the file command is such a useful utility.

- » No added dependencies
- » No removed dependencies

**filesystem-2.4.0-1 - filesystem-2.4.0-2**» Group: **System Environment/Base**» Summary: **The basic directory layout for a Linux system.**

## » Description:

The `filesystem` package is one of the basic packages that is installed on a Red Hat Linux system. Filesystem contains the basic directory layout for a Linux operating system, including the correct permissions for the directories.

- » No added dependencies
- » No removed dependencies

**findutils-4.2.27-4.1 - findutils-4.2.27-5.el5**» Group: **Applications/File**» Summary: **The GNU versions of find utilities (find and xargs).**

## » Description:

The findutils package contains programs which will help you locate files on your system. The find utility searches through a hierarchy of directories looking for files which match a certain set of criteria (such as a filename pattern). The xargs utility builds and executes command lines from standard input arguments (usually lists of file names generated by the find command).

You should install findutils because it includes tools that are very useful for finding things on your system.

- » No added dependencies
- » No removed dependencies

### firefox-1.5.0.12-3.el5 - firefox-3.0.5-1.el5\_2

- » Group: **Applications/Internet**
- » Summary: **Mozilla Firefox Web browser**
- » Description:

Mozilla Firefox is an open-source web browser, designed for standards compliance, performance and portability.

- » Added Dependencies:
  - startup-notification-devel
  - xulrunner-devel >= 1.9.0.5-1
  - xulrunner-devel-unstable >= 1.9.0.5-1
- » Removed Dependencies:
  - cairo-devel >= 0.5
  - libjpeg-devel
  - libpng-devel
  - nspr-devel >= 4.6
  - nss-devel >= 3.11.1
  - zlib-devel

### firstboot-1.4.27.3-1.el5 - firstboot-1.4.27.7-1.el5

- » Group: **System Environment/Base**
- » Summary: **Initial system configuration utility**
- » Description:

The firstboot utility runs after installation. It guides the user through a series of steps that allows for easier configuration of the machine.

- » No added dependencies
- » No removed dependencies

### flac-1.1.2-27 - flac-1.1.2-28.el5\_0.1

- **Group: Applications/Multimedia**
- **Summary: An encoder/decoder for the Free Lossless Audio Codec.**
- **Description:**

FLAC stands for Free Lossless Audio Codec. Grossly oversimplified, FLAC is similar to Ogg Vorbis, but lossless. The FLAC project consists of the stream format, reference encoders and decoders in library form, flac, a command-line program to encode and decode FLAC files, metaflac, a command-line metadata editor for FLAC files and input plugins for various music players.

- No added dependencies
- No removed dependencies

#### **fontconfig-2.4.1-6.el5 - fontconfig-2.4.1-7.el5**

- **Group: System Environment/Libraries**
- **Summary: Font configuration and customization library**
- **Description:**

Fontconfig is designed to locate fonts within the system and select them according to requirements specified by applications.

- No added dependencies
- No removed dependencies

#### **fonts-indic-2.0.13-1.el5 - fonts-indic-2.3.1-1.el5**

- **Group: User Interface/X**
- **Summary: Free Indian truetype/opentype fonts**
- **Description:**

This package provides the Hindi, Bengali, Gujarati, Punjabi, Tamil, Kannada, Malayalam, Oriya, Telugu TrueType/OpenType fonts.

- No added dependencies
- No removed dependencies

#### **freeradius-1.1.3-1.2.el5 - freeradius-1.1.3-1.4.el5**

- **Group: System Environment/Daemons**
- **Summary: High-performance and highly configurable free RADIUS server.**
- **Description:**

The FreeRADIUS Server Project is a high performance and highly configurable GPL'd free RADIUS server. The server is similar in some respects to Livingston's 2.0 server. While FreeRADIUS started as a variant of the Cistron RADIUS server, they don't share a lot in common any more. It now has many more features than Cistron or Livingston, and is much more configurable.

FreeRADIUS is an Internet authentication daemon, which implements the RADIUS protocol, as defined in RFC 2865 (and others). It allows Network Access Servers (NAS boxes) to perform authentication for dial-up users. There are also RADIUS clients available for Web servers, firewalls, Unix logins, and more. Using RADIUS allows authentication and authorization for a network to be centralized, and minimizes the amount of re-configuration which has to be done when adding or deleting new users.

- » No added dependencies
- » No removed dependencies

#### **freetype-2.2.1-19.el5 - freetype-2.2.1-20.el5\_2**

- » Group: **System Environment/Libraries**
- » Summary: **A free and portable font rendering engine**
- » Description:

The FreeType engine is a free and portable font rendering engine, developed to provide advanced font support for a variety of platforms and environments. FreeType is a library which can open and manages font files as well as efficiently load, hint and render individual glyphs. FreeType is not a font server or a complete text-rendering library.

- » No added dependencies
- » No removed dependencies

#### **ftp-0.17-33.fc6 - ftp-0.17-35.el5**

- » Group: **Applications/Internet**
- » Summary: **The standard UNIX FTP (File Transfer Protocol) client.**
- » Description:

The ftp package provides the standard UNIX command-line FTP (File Transfer Protocol) client. FTP is a widely used protocol for transferring files over the Internet and for archiving files.

If your system is on a network, you should install ftp in order to do file transfers.

- No added dependencies
- No removed dependencies

### **gcc-4.1.2-14.el5 - gcc-4.1.2-44.el5**

- Group: **Development/Languages**
- Summary: **Various compilers (C, C++, Objective-C, Java, ...)**
- Description:

The gcc package contains the GNU Compiler Collection version 4.1. You'll need this package in order to compile C code.

- Added Dependencies:
  - xulrunner-devel
- Removed Dependencies:
  - firefox-devel

### **gd-2.0.33-9.3.fc6 - gd-2.0.33-9.4.el5\_1.1**

- Group: **System Environment/Libraries**
- Summary: **A graphics library for quick creation of PNG or JPEG images**
- Description:

The gd graphics library allows your code to quickly draw images complete with lines, arcs, text, multiple colors, cut and paste from other images, and flood fills, and to write out the result as a PNG or JPEG file. This is particularly useful in Web applications, where PNG and JPEG are two of the formats accepted for inline images by most browsers. Note that gd is not a paint program.

- No added dependencies
- No removed dependencies

### **gdb-6.5-25.el5 - gdb-6.8-27.el5**

- Group: **Development/Debuggers**
- Summary: **A GNU source-level debugger for C, C++, Java and other languages**
- Description:

GDB, the GNU debugger, allows you to debug programs written in C, C++, Java, and other languages, by executing them in a controlled fashion and printing their data.

- Added Dependencies:
  - expat-devel
  - readline-devel
- Removed Dependencies:
  - /lib/libc.so.6

- /lib64/libc.so.6
- /usr/lib/libc.so
- /usr/lib64/libc.so

### gdm-2.16.0-31.0.1.el5 - gdm-2.16.0-46.el5

- Group: **User Interface/X**
- Summary: **The GNOME Display Manager.**
- Description:

Gdm (the GNOME Display Manager) is a highly configurable reimplementation of xdm, the X Display Manager. Gdm allows you to log into your system with the X Window System running and supports running several different X sessions on your local machine at the same time.

- No added dependencies
- No removed dependencies

### gedit-2.16.0-5.el5 - gedit-2.16.0-9.el5

- Group: **Applications/Editors**
- Summary: **gEdit is a small but powerful text editor for GNOME**
- Description:

gEdit is a small but powerful text editor designed specifically for the GNOME GUI desktop. gEdit includes a plug-in API (which supports extensibility while keeping the core binary small), support for editing multiple documents using notebook tabs, and standard text editor functions.

You'll need to have GNOME and GTK+ installed to use gEdit.

- No added dependencies
- No removed dependencies

### gfs-kmod-0.1.19-7.el5 - gfs-kmod-0.1.31-3.el5

- Group: **System Environment/Kernel**
- Summary: **gfs kernel modules**
- Description:

gfs - The Global File System is a symmetric, shared-disk, cluster file system.

- Added Dependencies:
  - kernel-devel-ia64 = 2.6.18-128.el5
  - kernel-xen-devel-ia64 = 2.6.18-128.el5
- Removed Dependencies:
  - kernel-devel-ia64 = 2.6.18-53.el5
  - kernel-xen-devel-ia64 = 2.6.18-53.el5

**gfs-utils-0.1.12-1.el5 - gfs-utils-0.1.18-1.el5**

- Group: **System Environment/Kernel**
- Summary: **Utilities for managing the global filesystem (GFS)**
- Description:

The gfs-utils package contains a number of utilities for creating, checking, modifying, and correcting any inconsistencies in GFS filesystems.

- No added dependencies
- No removed dependencies

**gfs2-utils-0.1.38-1.el5 - gfs2-utils-0.1.53-1.el5**

- Group: **System Environment/Kernel**
- Summary: **Utilities for managing the global filesystem (GFS)**
- Description:

The gfs2-utils package contains a number of utilities for creating, checking, modifying, and correcting any inconsistencies in GFS filesystems.

- No added dependencies
- No removed dependencies

**ghostscript-8.15.2-9.1.el5 - ghostscript-8.15.2-9.4.el5**

- Group: **Applications/Publishing**
- Summary: **A PostScript(TM) interpreter and renderer.**
- Description:

Ghostscript is a set of software that provides a PostScript(TM) interpreter, a set of C procedures (the Ghostscript library, which implements the graphics capabilities in the PostScript language) and an interpreter for Portable Document Format (PDF) files. Ghostscript translates PostScript code into many common, bitmapped formats, like those understood by your printer or screen. Ghostscript is normally used to display PostScript files and to print PostScript files to non-PostScript printers.

If you need to display PostScript files or print them to non-PostScript printers, you should install ghostscript. If you install ghostscript, you also need to install the ghostscript-fonts package.

- No added dependencies
- No removed dependencies

**gimp-print-4.2.7-22 - gimp-print-4.2.7-22.2.el5**

- Group: **System Environment/Libraries**
- Summary: **A collection of high-quality printer drivers.**
- Description:

These drivers provide printing quality for UNIX/Linux in many cases equal to or better than proprietary vendor-supplied drivers, and can be used for many of the most demanding printing tasks.

- No added dependencies
- No removed dependencies

### **glibc-2.5-18 - glibc-2.5-34**

- Group: **System Environment/Libraries**
- Summary: **The GNU libc libraries.**
- Description:

The glibc package contains standard libraries which are used by multiple programs on the system. In order to save disk space and memory, as well as to make upgrading easier, common system code is kept in one place and shared between programs. This particular package contains the most important sets of shared libraries: the standard C library and the standard math library. Without these two libraries, a Linux system will not function.

- No added dependencies
- No removed dependencies

### **gnbd-1.1.5-1.el5 - gnbd-1.1.7-1.el5**

- Group: **System Environment/Kernel**
- Summary: **GFS's Network Block Device**
- Description:

gnbd - GFS's Network Block Device

- No added dependencies
- No removed dependencies

### **gnbd-kmod-0.1.4-12.el5 - gnbd-kmod-0.1.5-2.el5**

- Group: **System Environment/Kernel**
- Summary: **gnbd kernel modules**
- Description:

gnbd - The Global Network Block Device

- Added Dependencies:



- kernel-devel-ia64 = 2.6.18-98.el5
- kernel-xen-devel-ia64 = 2.6.18-98.el5
- ▶ Removed Dependencies:
  - kernel-devel-ia64 = 2.6.18-53.el5
  - kernel-xen-devel-ia64 = 2.6.18-53.el5

### **gnome-panel-2.16.1-6.el5 - gnome-panel-2.16.1-7.el5**

- ▶ Group: **User Interface/Desktops**
- ▶ Summary: **GNOME panel**
- ▶ Description:

The GNOME panel provides the window list, workspace switcher, menus, and other features for the GNOME desktop.

- ▶ No added dependencies
- ▶ No removed dependencies

### **gnome-power-manager-2.16.0-8.el5 - gnome-power-manager-2.16.0-10.el5**

- ▶ Group: **Applications/System**
- ▶ Summary: **GNOME Power Manager**
- ▶ Description:

GNOME Power Manager uses the information and facilities provided by HAL displaying icons and handling user callbacks in an interactive GNOME session.  
GNOME Power Preferences allows authorised users to set policy and change preferences.

- ▶ No added dependencies
- ▶ No removed dependencies

### **gnome-python2-desktop-2.16.0-1.fc6 - gnome-python2-desktop-2.16.0-2.el5**

- ▶ Group: **Development/Languages**
- ▶ Summary: **The sources for additional PyGNOME Python extension modules for the GNOME desktop**
- ▶ Description:

The gnome-python-desktop package contains the source packages for additional Python bindings for GNOME. It should be used together with gnome-python.

- ▶ No added dependencies
- ▶ No removed dependencies

### **gnome-python2-extras-2.14.2-4.fc6 - gnome-python2-extras-2.14.2-6.el5**

- Group: **Development/Languages**
- Summary: **The sources for additional. PyGNOME Python extension modules.**
- Description:

The gnome-python-extra package contains the source packages for additional Python bindings for GNOME. It should be used together with gnome-python.

- Added Dependencies:
  - gecko-devel-unstable >= 1.9
- Removed Dependencies:
  - firefox-devel >= 1.5.0.5

### gnome-screensaver-2.16.1-5.el5 - gnome-screensaver-2.16.1-8.el5

- Group: **Amusements/Graphics**
- Summary: **GNOME Screensaver**
- Description:

gnome-screensaver is a screen saver and locker that aims to have simple, sane, secure defaults and be well integrated with the desktop.

- Added Dependencies:
  - libXxf86misc-devel
  - libXxf86vm-devel
- No removed dependencies

### gnome-terminal-2.16.0-3.el5 - gnome-terminal-2.16.0-5.3.el5

- Group: **User Interface/Desktops**
- Summary: **GNOME Terminal**
- Description:

GNOME terminal emulator application.

- No added dependencies
- No removed dependencies

### gnome-utils-2.16.0-3.el5 - gnome-utils-2.16.0-5.el5

- Group: **Applications/System**
- Summary: **GNOME utility programs**
- Description:

GNOME (GNU Network Object Model Environment) is a user-friendly set of GUI applications and desktop tools to be used in conjunction with a window manager for the X Window System. The gnome-utils package includes a set of small "desk accessory" utility applications for GNOME.

- » No added dependencies
- » No removed dependencies

#### **gnome-volume-manager-2.15.0-4.el5 - gnome-volume-manager-2.15.0-5.el5**

- » Group: **Applications/System**
- » Summary: **The GNOME Volume Manager**
- » Description:

The GNOME Volume Manager monitors volume-related events and responds with user-specified policy. The GNOME Volume Manager can automount hot-plugged drives, automount inserted removable media, autorun programs, automatically play audio CDs and video DVDs, and automatically import photos from a digital camera. The GNOME Volume Manager does this entirely in user-space and without polling.

The GNOME Volume Manager sits at the top end of a larger picture that aims to integrate the Linux system from the kernel on up through the desktop and its applications.

- » No added dependencies
- » No removed dependencies

#### **gnupg-1.4.5-13 - gnupg-1.4.5-14**

- » Group: **Applications/System**
- » Summary: **A GNU utility for secure communication and data storage.**
- » Description:

GnuPG (GNU Privacy Guard) is a GNU utility for encrypting data and creating digital signatures. GnuPG has advanced key management capabilities and is compliant with the proposed OpenPGP Internet standard described in RFC2440. Since GnuPG doesn't use any patented algorithm, it is not compatible with any version of PGP2 (PGP2.x uses only IDEA for symmetric-key encryption, which is patented worldwide).

- » No added dependencies
- » No removed dependencies

#### **gnuplot-4.0.0-12 - gnuplot-4.0.0-14.el5**

- Group: **Applications/Engineering**
- Summary: **A program for plotting mathematical expressions and data.**
- Description:

Gnuplot is a command-line driven, interactive function plotting program especially suited for scientific data representation. Gnuplot can be used to plot functions and data points in both two and three dimensions and in many different formats.

Install gnuplot if you need a graphics package for scientific data representation.

- Added Dependencies:
  - gd-devel
- No removed dependencies

### **gnutls-1.4.1-2 - gnutls-1.4.1-3.el5\_2.1**

- Group: **System Environment/Libraries**
- Summary: **A TLS protocol implementation.**
- Description:

GnuTLS is a project that aims to develop a library which provides a secure layer, over a reliable transport layer. Currently the GnuTLS library implements the proposed standards by the IETF's TLS working group.

- No added dependencies
- No removed dependencies

### **grub-0.97-13 - grub-0.97-13.2**

- Group: **System Environment/Base**
- Summary: **GRUB - the Grand Unified Boot Loader.**
- Description:

GRUB (Grand Unified Boot Loader) is an experimental boot loader capable of booting into most free operating systems - Linux, FreeBSD, NetBSD, GNU Mach, and others as well as most commercial operating systems.

- No added dependencies
- No removed dependencies

### **gststreamer-0.10.9-3.el5 - gststreamer-0.10.20-3.el5**

- Group: **Applications/Multimedia**
- Summary: **GStreamer streaming media framework runtime**
- Description:

GStreamer is a streaming media framework, based on graphs of filters which operate on media data. Applications using this library can do anything from real-time sound processing to playing videos, and just about anything else media-related. Its plugin-based architecture means that new data types or processing capabilities can be added simply by installing new plugins.

► Added Dependencies:

- PyXML
- autoconf
- automake
- docbook-style-dsssl
- docbook-style-xsl
- docbook-utils
- gettext-devel
- ghostscript
- jadetex
- libtool
- libxslt
- netpbm-progs
- openjade
- python2
- tetex-dvips
- transfig
- xfig

► No removed dependencies

### **gstreamer-plugins-base-0.10.9-6.el5 - gstreamer-plugins-base-0.10.20-3.el5**

► Group: **Applications/Multimedia**

► Summary: **GStreamer streaming media framework base plug-ins**

► Description:

GStreamer is a streaming media framework, based on graphs of filters which operate on media data. Applications using this library can do anything from real-time sound processing to playing videos, and just about anything else media-related. Its plugin-based architecture means that new data types or processing capabilities can be added simply by installing new plug-ins.

This package contains a set of well-maintained base plug-ins.

► Added Dependencies:

- autoconf
- automake

- gnome-vfs2-devel
- gstreamer-devel >= 0.10.20
- » Removed Dependencies:
  - gnome-vfs2-devel > 1.9.4.00
  - gstreamer-devel >= 0.10.6
  - liboil-devel >= 0.3.2

### gstreamer-plugins-good-0.10.4-4.el5 - gstreamer-plugins-good-0.10.9-1.el5

- » Group: **Applications/Multimedia**
- » Summary: **GStreamer plug-ins with good code and licensing**
- » Description:

GStreamer is a streaming media framework, based on graphs of filters which operate on media data. Applications using this library can do anything from real-time sound processing to playing videos, and just about anything else media-related. Its plugin-based architecture means that new data types or processing capabilities can be added simply by installing new plug-ins.

GStreamer Good Plug-ins is a collection of well-supported plug-ins of good quality and under the LGPL license.

- » No added dependencies
- » No removed dependencies

### gthumb-2.7.8-5.el5 - gthumb-2.7.8-8.el5

- » Group: **User Interface/X**
- » Summary: **Image viewer, editor, organizer**
- » Description:

gthumb is an application for viewing, editing, and organizing collections of images.

- » No added dependencies
- » No removed dependencies

### gtk2-2.10.4-19.el5 - gtk2-2.10.4-20.el5

- » Group: **System Environment/Libraries**
- » Summary: **The GIMP ToolKit (GTK+), a library for creating GUIs for X**
- » Description:

GTK+ is a multi-platform toolkit for creating graphical user interfaces. Offering a complete set of widgets, GTK+ is suitable for projects ranging from small one-off tools to complete application suites.

- » No added dependencies
- » No removed dependencies

### **gtkhtml3-3.12.0-1.fc6 - gtkhtml3-3.16.3-1.el5**

- » Group: **System Environment/Libraries**
- » Summary: **gtkhtml library**
- » Description:

GtkHTML is a lightweight HTML rendering/printing/editing engine. It was originally based on KHTMLW, but is now being developed independently of it.

- » Added Dependencies:
  - intltool >= 0.35.0
- » Removed Dependencies:
  - intltool
  - libgnomeprint22-devel >= 2.7.1
  - libgnomeprintui22-devel >= 2.7.1

### **gzip-1.3.5-9.el5 - gzip-1.3.5-10.el5**

- » Group: **Applications/File**
- » Summary: **The GNU data compression program.**
- » Description:

The gzip package contains the popular GNU gzip data compression program. Gzipped files have a .gz extension.

Gzip should be installed on your Red Hat Linux system, because it is a very commonly used data compression program.

- » No added dependencies
- » No removed dependencies

### **hal-0.5.8.1-25.el5 - hal-0.5.8.1-38.el5**

- » Group: **System Environment/Libraries**
- » Summary: **Hardware Abstraction Layer**
- » Description:

HAL is daemon for collection and maintaining information from several sources about the hardware on the system. It provides a live device list through D-BUS.

- » Added Dependencies:
  - gperf >= 3.0.1
- » No removed dependencies

**hal-cups-utils-0.6.2-5 - hal-cups-utils-0.6.2-5.2.el5**

- Group: **Applications/System**
- Summary: **Halified CUPS utilities**
- Description:

Halified utilities for CUPS:

- hal\_lpadmin
- hal CUPS backend

- No added dependencies
- No removed dependencies

**hplip-1.6.7-4.1.el5 - hplip-1.6.7-4.1.el5\_2.4**

- Group: **System Environment/Daemons**
- Summary: **HP Linux Imaging and Printing Project**
- Description:

The Hewlett-Packard Linux Imaging and Printing Project provides drivers for HP printers and multi-function peripherals.

- Added Dependencies:
  - openssl-devel
- No removed dependencies

**htdig-3.2.0b6-9.el5 - htdig-3.2.0b6-9.0.1.el5\_1**

- Group: **Applications/Internet**
- Summary: **ht://Dig - Web search engine**
- Description:

The ht://Dig system is a complete world wide web indexing and searching system for a small domain or intranet. This system is not meant to replace the need for powerful internet-wide search systems like Lycos, Infoseek, Webcrawler and AltaVista. Instead it is meant to cover the search needs for a single company, campus, or even a particular sub section of a web site. As opposed to some WAIS-based or web-server based search engines, ht://Dig can span several web servers at a site. The type of these different web servers doesn't matter as long as they understand the HTTP 1.0 protocol. ht://Dig is also used by KDE to search KDE's HTML documentation.

ht://Dig was developed at San Diego State University as a way to search the various web servers on the campus network.

- No added dependencies



- » No removed dependencies

#### **htmlview-4.0.0-1.el5 - htmlview-4.0.0-2.el5**

- » Group: **Applications/Internet**
- » Summary: **Launcher of Preferred Web Browser**
- » Description:

htmlview and launchmail are tools for launching Preferred Applications. This package exists for compatibility reasons and is likely to be removed later when equivalent functionality is implemented elsewhere.

- » No added dependencies
- » No removed dependencies

#### **httpd-2.2.3-11.el5 - httpd-2.2.3-22.el5**

- » Group: **System Environment/Daemons**
- » Summary: **Apache HTTP Server**
- » Description:

The Apache HTTP Server is a powerful, efficient, and extensible web server.

- » No added dependencies
- » No removed dependencies

#### **hwbrowser-0.30-1.el5 - hwbrowser-0.30-2.el5**

- » Group: **Applications/System**
- » Summary: **A hardware browser.**
- » Description:

A browser for your current hardware configuration.

- » No added dependencies
- » No removed dependencies

#### **hwdata-0.211-1 - hwdata-0.213.11-1.el5**

- » Group: **System Environment/Base**
- » Summary: **Hardware identification and configuration data**
- » Description:

hwdata contains various hardware identification and configuration data, such as the pci.ids database and MonitorsDb databases.

- » No added dependencies
- » No removed dependencies

**ibutils-1.2-2.el5 - ibutils-1.2-9.el5**

- Group: **System Environment/Libraries**
- Summary: **OpenIB Mellanox InfiniBand Diagnostic Tools**
- Description:

ibutils provides IB network and path diagnostics.

- Added Dependencies:
  - autoconf
  - libibumad-devel
  - libtool
  - opensm-devel >= 3.2.0
- Removed Dependencies:
  - opensm-devel >= 3.0.3

**icu-3.6-5.11 - icu-3.6-5.11.1**

- Group: **System Environment/Libraries**
- Summary: **International Components for Unicode**
- Description:

The International Components for Unicode (ICU) libraries provide robust and full-featured Unicode services on a wide variety of platforms. ICU supports the most current version of the Unicode standard, and they provide support for supplementary Unicode characters (needed for GB 18030 repertoire support). As computing environments become more heterogeneous, software portability becomes more important. ICU lets you produce the same results across all the various platforms you support, without sacrificing performance. It offers great flexibility to extend and customize the supplied services.

- No added dependencies
- No removed dependencies

**initscripts-8.45.17.EL-1 - initscripts-8.45.25-1.el5**

- Group: **System Environment/Base**
- Summary: **The inittab file and the /etc/init.d scripts.**
- Description:

The initscripts package contains the basic system scripts used to boot your Red Hat system, change runlevels, and shut the system down cleanly. Initscripts also contains the scripts that activate and deactivate most network interfaces.

- No added dependencies
- No removed dependencies

**inn-2.4.3-6.fc6 - inn-2.4.3-8.el5**

- Group: **System Environment/Daemons**
- Summary: **The InterNetNews (INN) system, an Usenet news server.**
- Description:

INN (InterNetNews) is a complete system for serving Usenet news and/or private newsfeeds. INN includes innd, an NNTP (NetNews Transport Protocol) server, and nnrpd, a newsreader that is spawned for each client. Both innd and nnrpd vary slightly from the NNTP protocol, but not in ways that are easily noticed.

Install the inn package if you need a complete system for serving and reading Usenet news. You may also need to install inn-devel, if you are going to use a separate program which interfaces to INN, like newsgate or tin.

- No added dependencies
- No removed dependencies

**iproute-2.6.18-4.el5 - iproute-2.6.18-9.el5**

- Group: **Applications/System**
- Summary: **Advanced IP routing and network device configuration tools.**
- Description:

The iproute package contains networking utilities (ip and rtmon, for example) which are designed to use the advanced networking capabilities of the Linux 2.4.x and 2.6.x kernel.

- No added dependencies
- No removed dependencies

**iprutils-2.2.6-1.el5 - iprutils-2.2.8-2.el5**

- Group: **System Environment/Base**
- Summary: **Utilities for the IBM Power Linux RAID adapters**
- Description:

Provides a suite of utilities to manage and configure SCSI devices supported by the ipr SCSI storage device driver.

- No added dependencies
- No removed dependencies

**ipsec-tools-0.6.5-8.el5 - ipsec-tools-0.6.5-13.el5**

- Group: **System Environment/Base**
- Summary: **Tools for configuring and using IPSEC**
- Description:

This is the IPsec-Tools package. You need this package in order to really use the IPsec functionality in the linux-2.5+ kernels. This package builds:

- setkey, a program to directly manipulate policies and SAs
- racoon, an IKEv1 keying daemon

- ▶ Added Dependencies:
  - kernel-headers >= 2.6.18-92
- ▶ No removed dependencies

#### iptables-1.3.5-1.2.1 - iptables-1.3.5-4.el5

- ▶ Group: **System Environment/Base**
- ▶ Summary: **Tools for managing Linux kernel packet filtering capabilities.**
- ▶ Description:

The iptables utility controls the network packet filtering code in the Linux kernel. If you need to set up firewalls and/or IP masquerading, you should install this package.

- ▶ No added dependencies
- ▶ No removed dependencies

#### iputils-20020927-43.el5 - iputils-20020927-45.el5

- ▶ Group: **System Environment/Daemons**
- ▶ Summary: **Network monitoring tools including ping.**
- ▶ Description:

The iputils package contains basic utilities for monitoring a network, including ping. The ping command sends a series of ICMP protocol ECHO\_REQUEST packets to a specified network host to discover whether the target machine is alive and receiving network traffic.

- ▶ No added dependencies
- ▶ No removed dependencies

#### irqbalance-0.55-6.el5 - irqbalance-0.55-10.el5

- ▶ Group: **System Environment/Base**
- ▶ Summary: **IRQ balancing daemon.**
- ▶ Description:

irqbalance is a daemon that evenly distributes IRQ load across multiple CPUs for enhanced performance.

- ▶ No added dependencies
- ▶ No removed dependencies

**iscsi-initiator-utils-6.2.0.865-0.8.el5 - iscsi-initiator-utils-6.2.0.868-0.18.el5**

- Group: **System Environment/Daemons**
- Summary: **iSCSI daemon and utility programs**
- Description:

The `iscsi` package provides the server daemon for the iSCSI protocol, as well as the utility programs used to manage it. iSCSI is a protocol for distributed disk access using SCSI commands sent over Internet Protocol networks.

- Added Dependencies:
  - `bison`
  - `flex`
- No removed dependencies

**isd4k-utils-3.2-50.1 - isdn4k-utils-3.2-51.el5**

- Group: **Applications/System**
- Summary: **Utilities for configuring an ISDN subsystem.**
- Description:

The `isd4k-utils` package contains a collection of utilities needed for configuring an ISDN subsystem.

- No added dependencies
- No removed dependencies

**jakarta-commons-collections-3.1-6jpp.1 - jakarta-commons-collections-3.2-2jpp.3**

- Group: **Development/Libraries/Java**
- Summary: **Jakarta Commons Collections Package**
- Description:

The introduction of the Collections API by Sun in JDK 1.2 has been a boon to quick and effective Java programming. Ready access to powerful data structures has accelerated development by reducing the need for custom container classes around each core object. Most Java2 APIs are significantly easier to use because of the Collections API. However, there are certain holes left unfilled by Sun's implementations, and the Jakarta-Commons Collections Component strives to fulfill them. Among the features of this package are:

- special-purpose implementations of Lists and Maps for fast access
- adapter classes from Java1-style containers (arrays, enumerations) to Java2-style collections.
- methods to test or create typical set-theory properties of collections such as union, intersection, and closure.

- Added Dependencies:
  - `xml-commons-apis`  $\geq 1.3$
- No removed dependencies

**java-1.4.2-gcj-compat-1.4.2.0-40jpp.112 - java-1.4.2-gcj-compat-1.4.2.0-40jpp.115**

- Group: **Development/Languages**
- Summary: **JPackage runtime scripts for GCJ**
- Description:

This package installs directory structures, shell scripts and symbolic links to simulate a JPackage-compatible runtime environment with GCJ.

- No added dependencies
- No removed dependencies

**kbd-1.12-19.el5 - kbd-1.12-21.el5**

- Group: **System Environment/Base**
- Summary: **Tools for configuring the console (keyboard, virtual terminals, etc.)**
- Description:

The kbd package contains tools for managing a Linux system's console's behavior, including the keyboard, the screen fonts, the virtual terminals and font files.

- No added dependencies
- No removed dependencies

**kdeadmin-3.5.4-2.fc6 - kdeadmin-3.5.4-3.el5**

- Group: **User Interface/Desktops**
- Summary: **Administrative tools for KDE.**
- Description:

The kdeadmin package includes administrative tools for the K Desktop Environment (KDE) including:

kcron - Crontab editor  
kdat - Tape backup tool  
kuser - Frontend for configuring users and user groups

- No added dependencies
- No removed dependencies

**kdebase-3.5.4-13.6.el5 - kdebase-3.5.4-19.el5**

- Group: **User Interface/Desktops**
- Summary: **K Desktop Environment - core files**
- Description:

Core applications for the K Desktop Environment. Included are: kdm (replacement for xdm), kwin (window manager), konqueror (filemanager, web browser, ftp client, ...), konsole (xterm replacement), kpanel (application starter and desktop pager), kaudio (audio server), kdehelp (viewer for kde help files, info and man pages), kthememgr (system for managing alternate theme packages) plus other KDE components (kcheckpass, kikbd, kscreensaver, kcontrol, kfind, kfontmanager, kmenuedit).

- ▶ Added Dependencies:
  - libutempter-devel
- ▶ No removed dependencies

### **kdebindings-3.5.4-1.fc6 - kdebindings-3.5.4-6.el5**

- ▶ Group: **User Interface/Desktops**
- ▶ Summary: **KDE bindings to non-C++ languages**
- ▶ Description:

KDE/DCOP bindings to non-C++ languages

- ▶ Added Dependencies:
  - libutempter-devel
  - perl >= 5.8.8
- ▶ Removed Dependencies:
  - perl >= 5.8

### **kdelibs-3.5.4-13.el5 - kdelibs-3.5.4-18.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **K Desktop Environment - Libraries**
- ▶ Description:

Libraries for the K Desktop Environment:  
KDE Libraries included: kdecop (KDE core library), kdeui (user interface), kfm (file manager), khtmlw (HTML widget), kio (Input/Output, networking), kspell (spelling checker), jscript (javascript), kab (addressbook), kimgio (image manipulation).

- ▶ No added dependencies
- ▶ No removed dependencies

### **kdenetwork-3.5.4-4.fc6 - kdenetwork-3.5.4-8.el5**

- ▶ Group: **Applications/Internet**
- ▶ Summary: **K Desktop Environment - Network Applications**
- ▶ Description:

Networking applications for the K Desktop Environment.

- Added Dependencies:
  - libutempter-devel
- No removed dependencies

#### **kernel-2.6.18-53.el5 - kernel-2.6.18-128.el5**

- Group: **System Environment/Kernel**
- Summary: **The Linux kernel (the core of the Linux operating system)**
- Description:

The kernel package contains the Linux kernel (vmlinuz), the core of any Linux operating system. The kernel handles the basic functions of the operating system: memory allocation, process allocation, device input and output, etc.

- No added dependencies
- No removed dependencies

#### **kexec-tools-1.101-194.4.el5 - kexec-tools-1.102pre-56.el5**

- Group: **Applications/System**
- Summary: **The kexec/kdump userspace component.**
- Description:

kexec-tools provides /sbin/kexec binary that facilitates a new kernel to boot using the kernel's kexec feature either on a normal or a panic reboot. This package contains the /sbin/kexec binary and ancillary utilities that together form the userspace component of the kernel's kexec feature.

- No added dependencies
- No removed dependencies

#### **krb5-1.6.1-17.el5 - krb5-1.6.1-31.el5**

- Group: **System Environment/Libraries**
- Summary: **The Kerberos network authentication system.**
- Description:

Kerberos V5 is a trusted-third-party network authentication system, which can improve your network's security by eliminating the insecure practice of cleartext passwords.

- No added dependencies
- No removed dependencies

#### **ksh-20060214-1.4 - ksh-20080202-2.el5**

- Group: **Applications/Shells**



► Summary: **The Original ATT Korn Shell**

► Description:

KSH-93 is the most recent version of the KornShell by David Korn of AT&T Bell Laboratories.  
KornShell is a shell programming language, which is upward compatible with "sh" (the Bourne Shell).

- No added dependencies
- No removed dependencies

### **kudzu-1.2.57.1.15-1 - kudzu-1.2.57.1.21-1**

► Group: **Applications/System**

► Summary: **The Red Hat Linux hardware probing tool.**

► Description:

Kudzu is a hardware probing tool run at system boot time to determine what hardware has been added or removed from the system.

- No added dependencies
- No removed dependencies

### **lam-7.1.2-8.fc6 - lam-7.1.2-14.el5**

► Group: **Development/Libraries**

► Summary: **The LAM (Local Area Multicomputer) programming environment.**

► Description:

LAM (Local Area Multicomputer) is an Message-Passing Interface (MPI) programming environment and development system for heterogeneous computers on a network. With LAM/MPI, a dedicated cluster or an existing network computing infrastructure can act as one parallel computer to solve one problem. LAM/MPI is considered to be "cluster friendly" because it offers daemon-based process startup/control as well as fast client-to-client message passing protocols. LAM/MPI can use TCP/IP and/or shared memory for message passing (different RPMs are supplied for this -- see the main LAM website at <http://www.mpi.nd.edu/lam/> for details).<

LAM features a full implementation of MPI version 1 (with the exception that LAM does not support cancelling of sends), and much of version 2. Compliant applications are source code portable between LAM and any other implementation of MPI. In addition to meeting the standard, LAM/MPI offers extensive monitoring capabilities to support debugging. Monitoring happens on two levels: On one level, LAM/MPI has the hooks to allow a snapshot of a process and message status to be taken at any time during an application run. The status includes all aspects of synchronization plus datatype map/signature, communicator group membership and message contents (see the XMPI application on the main LAM website). On the second level, the MPI library can produce a cumulative record of communication, which can be visualized either at runtime or post-mortem.

- » No added dependencies
- » No removed dependencies

#### **libX11-1.0.3-8.0.1.el5 - libX11-1.0.3-9.el5**

- » Group: **System Environment/Libraries**
- » Summary: **X.Org X11 libX11 runtime library**
- » Description:

X.Org X11 libX11 runtime library

- » No added dependencies
- » No removed dependencies

#### **libXfont-1.2.2-1.0.2.el5 - libXfont-1.2.2-1.0.3.el5\_1**

- » Group: **System Environment/Libraries**
- » Summary: **X.Org X11 libXfont runtime library**
- » Description:

X.Org X11 libXfont runtime library

- » No added dependencies
- » No removed dependencies

#### **libao-0.8.6-5 - libao-0.8.6-7**

- » Group: **System Environment/Libraries**

► Summary: **Cross Platform Audio Output Library.**

► Description:

Libao is a cross platform audio output library. It currently supports ESD, OSS, Solaris, and IRIX.

► No added dependencies

► No removed dependencies

### **libchewing-0.3.0-7.el5 - libchewing-0.3.0-8.el5**

► Group: **System Environment/Libraries**

► Summary: **Intelligent phonetic input method library for Traditional Chinese**

► Description:

libchewing is an intelligent phonetic input method library for Chinese.

It provides the core algorithm and logic that can be used by various input methods. The Chewing input method is a smart bopomofo phonetics input method that is useful for inputting Mandarin Chinese.

► No added dependencies

► No removed dependencies

### **libdhcp-1.20-2.el5 - libdhcp-1.20-6.el5**

► Group: **Development/Libraries**

► Summary: **A library for network interface configuration with DHCP**

► Description:

libdhcp enables programs to invoke and control the Dynamic Host Configuration Protocol (DHCP) clients: the Internet Software Consortium (ISC) IPv4 DHCP client library, libdhcp4client, and the IPv6 DHCPv6 client library, libdhcp6client, and provides Network Interface Configuration (NIC) services for network parameter autoconfiguration with DHCP.

► Added Dependencies:

- dhcp-devel >= 12:3.0.5-13
- libdhcp4client-devel >= 12:3.0.5-13
- libdhcp6client-devel >= 1.0.9-1

► Removed Dependencies:

- dhcp-devel
- libdhcp4client-devel >= 12:3.0.4-17
- libdhcp6client-devel

### **liberation-fonts-0.2-2.el5 - liberation-fonts-1.0-1.el5**

- Group: **User Interface/X**
- Summary: **Fonts to replace commonly used Microsoft Windows Fonts**
- Description:

The Liberation Fonts are intended to be replacements for the three most commonly used fonts on Microsoft systems: Times New Roman, Arial, and Courier New.

- No added dependencies
- No removed dependencies

#### **libexif-0.6.13-4.0.2.e15 - libexif-0.6.13-4.0.2.e15\_1.1**

- Group: **System Environment/Libraries**
- Summary: **Library for extracting extra information from image files**
- Description:

Most digital cameras produce EXIF files, which are JPEG files with extra tags that contain information about the image. The EXIF library allows you to parse an EXIF file and read the data from those tags.

- No added dependencies
- No removed dependencies

#### **libgcrypt-1.2.3-1 - libgcrypt-1.2.4-1.e15**

- Group: **System Environment/Libraries**
- Summary: **A general-purpose cryptography library.**
- Description:

Libgcrypt is a general purpose crypto library based on the code used in GNU Privacy Guard. This is a development version.

- No added dependencies
- No removed dependencies

#### **libgnomeprint22-2.12.1-9.e15 - libgnomeprint22-2.12.1-10.e15**

- Group: **System Environment/Base**
- Summary: **Printing library for GNOME.**
- Description:

GNOME (GNU Network Object Model Environment) is a user-friendly set of applications and desktop tools to be used in conjunction with a window manager for the X Window System. The gnome-print package contains libraries and fonts needed by GNOME applications for printing.

You should install the gnome-print package if you intend to use any of the GNOME applications that can print. If you would like to develop GNOME applications that can print you will also need to install the gnome-print devel package.

- ▶ No added dependencies
- ▶ No removed dependencies

### **libhugetlbfs-1.0.1-1.el5 - libhugetlbfs-1.3-3.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **Library to access the Huge TLB Filesystem**
- ▶ Description:

The libhugetlbfs library interacts with the Linux hugetlbfs to make large pages available to applications in a transparent manner.

- ▶ No added dependencies
- ▶ No removed dependencies

### **libica-1.3.7-5.el5 - libica-1.3.7-8.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **A library of functions for accessing ICA hardware crypto on IBM zSeries**
- ▶ Description:

A library of functions for accessing ICA hardware crypto on IBM zSeries

- ▶ Added Dependencies:
  - autoconf
  - automake
  - libtool
- ▶ No removed dependencies

### **libnl-1.0-0.10.pre5.4 - libnl-1.0-0.10.pre5.5**

- ▶ Group: **Development/Libraries**
- ▶ Summary: **Convenience library for kernel netlink sockets**
- ▶ Description:

This package contains a convenience library to simplify using the Linux kernel's netlink sockets interface for network manipulation

- » No added dependencies
- » No removed dependencies

### **libpng-1.2.10-7.0.2 - libpng-1.2.10-7.1.el5\_0.1**

- » Group: **System Environment/Libraries**
- » Summary: **A library of functions for manipulating PNG image format files**
- » Description:

The libpng package contains a library of functions for creating and manipulating PNG (Portable Network Graphics) image format files. PNG is a bit-mapped graphics format similar to the GIF format. PNG was created to replace the GIF format, since GIF uses a patented data compression algorithm.

Libpng should be installed if you need to manipulate PNG format image files.

- » No added dependencies
- » No removed dependencies

### **libraw1394-1.2.1-1.fc6 - libraw1394-1.3.0-1.el5**

- » Group: **System Environment/Libraries**
- » Summary: **Library providing low-level IEEE-1394 access**
- » Description:

The libraw1394 library provides direct access to the IEEE-1394 bus through the Linux 1394 subsystem's raw1394 user space interface.

- » Added Dependencies:
  - autoconf
  - automake
  - libtool
- » No removed dependencies

### **librtas-1.2.4-3.el5 - librtas-1.3.3-1.el5**

- » Group: **System Environment/Libraries**
- » Summary: **Libraries to provide access to RTAS calls and RTAS events**
- » Description:

The `librtas` shared library provides userspace with an interface through which certain RTAS calls can be made. The library uses either of the RTAS User Module or the RTAS system call to direct the kernel in making these calls.

The `librtasevent` shared library provides users with a set of definitions and common routines useful in parsing and dumping the contents of RTAS events.

- ▶ No added dependencies
- ▶ No removed dependencies

### **libselinux-1.33.4-4.el5 - libselinux-1.33.4-5.1.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **SELinux library and simple utilities**
- ▶ Description:

Security-enhanced Linux is a feature of the Linux® kernel and a number of utilities with enhanced security functionality designed to add mandatory access controls to Linux. The Security-enhanced Linux kernel contains new architectural components originally developed to improve the security of the Flask operating system. These architectural components provide general support for the enforcement of many kinds of mandatory access control policies, including those based on the concepts of Type Enforcement®, Role-based Access Control, and Multi-level Security.

`libselinux` provides an API for SELinux applications to get and set process and file security contexts and to obtain security policy decisions. Required for any applications that use the SELinux API.

- ▶ No added dependencies
- ▶ No removed dependencies

### **libtiff-3.8.2-7.el5 - libtiff-3.8.2-7.el5\_2.2**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **Library of functions for manipulating TIFF format image files**
- ▶ Description:

The `libtiff` package contains a library of functions for manipulating TIFF (Tagged Image File Format) image format files. TIFF is a widely used file format for bitmapped images. TIFF files usually end in the `.tif` extension and they are often quite large.

The `libtiff` package should be installed if you need to manipulate TIFF format image files.

- ▶ No added dependencies
- ▶ No removed dependencies

**libuser-0.54.7-2.el5.2 - libuser-0.54.7-2.el5.5**

- Group: **System Environment/Base**
- Summary: **A user and group account administration library.**
- Description:

The libuser library implements a standardized interface for manipulating and administering user and group accounts. The library uses pluggable back-ends to interface to its data sources.

Sample applications modeled after those included with the shadow password suite are included.

- No added dependencies
- No removed dependencies

**libutempter-1.1.4-3.fc6 - libutempter-1.1.4-4.el5**

- Group: **System Environment/Libraries**
- Summary: **A privileged helper for utmp/wtmp updates**
- Description:

This library provides interface for terminal emulators such as screen and xterm to record user sessions to utmp and wtmp files.

- No added dependencies
- No removed dependencies

**libvirt-0.2.3-9.el5 - libvirt-0.3.3-14.el5**

- Group: **Development/Libraries**
- Summary: **Library providing a simple API virtualization**
- Description:

Libvirt is a C toolkit to interact with the virtualization capabilities of recent versions of Linux (and other OSes).

- Added Dependencies:
  - avahi-devel
  - bridge-utils
  - dnsmasq
  - gnutls-devel
- Removed Dependencies:
  - /sbin/iptables
  - libsysfs-devel

**libvorbis-1.1.2-3.el5.0 - libvorbis-1.1.2-3.el5\_1.2**

- Group: **System Environment/Libraries**



- » Summary: **The Vorbis General Audio Compression Codec.**
- » Description:

Ogg Vorbis is a fully open, non-proprietary, patent-and royalty-free, general-purpose compressed audio format for audio and music at fixed and variable bitrates from 16 to 128 kbps/channel.

The libvorbis package contains runtime libraries for use in programs that support Ogg Vorbis.

- » No added dependencies
- » No removed dependencies

#### **libxml2-2.6.26-2.1.2 - libxml2-2.6.26-2.1.2.7**

- » Group: **Development/Libraries**
- » Summary: **Library providing XML and HTML support**
- » Description:

This library allows to manipulate XML files. It includes support to read, modify and write XML and HTML files. There is DTDs support this includes parsing and validation even with complex DTDs, either at parse time or later once the document has been modified. The output can be a simple SAX stream or and in-memory DOM like representations. In this case one can use the built-in XPath and XPointer implementation to select subnodes or ranges. A flexible Input/Output mechanism is available, with existing HTTP and FTP modules and combined to an URI library.

- » No added dependencies
- » No removed dependencies

#### **libxslt-1.1.17-2 - libxslt-1.1.17-2.el5\_2.2**

- » Group: **Development/Libraries**
- » Summary: **Library providing the Gnome XSLT engine**
- » Description:

This C library allows to transform XML files into other XML files (or HTML, text, ...) using the standard XSLT stylesheet transformation mechanism. To use it you need to have a version of libxml2 >= 2.6.25 installed. The xsltproc command is a command line interface to the XSLT engine

- » No added dependencies
- » No removed dependencies

#### **linuxwacom-0.7.4.3-2.el5 - linuxwacom-0.7.8.3-5.el5**

- » Group: **User Interface/X Hardware Support**
- » Summary: **Wacom Drivers from Linux Wacom Project**
- » Description:

The Linux Wacom Project manages the drivers, libraries, and documentation for configuring and running Wacom tablets under the Linux operating system. It contains diagnostic applications as well as X.org XInput drivers.

- » Added Dependencies:
  - desktop-file-utils
  - tcl-devel
  - tk-devel
- » No removed dependencies

### **lm\_sensors-2.10.0-3.1 - lm\_sensors-2.10.7-4.el5**

- » Group: **Applications/System**
- » Summary: **Hardware monitoring tools.**
- » Description:

The lm\_sensors package includes a collection of modules for general SMBus access and hardware monitoring. NOTE: this requires special support which is not in standard 2.2-vintage kernels.

- » No added dependencies
- » No removed dependencies

### **logrotate-3.7.4-7 - logrotate-3.7.4-9**

- » Group: **System Environment/Base**
- » Summary: **Rotates, compresses, removes and mails system log files.**
- » Description:

The logrotate utility is designed to simplify the administration of log files on a system which generates a lot of log files. Logrotate allows for the automatic rotation compression, removal and mailing of log files. Logrotate can be set to handle a log file daily, weekly, monthly or when the log file gets to a certain size. Normally, logrotate runs as a daily cron job.

Install the logrotate package if you need a utility to deal with the log files on your system.

- » No added dependencies
- » No removed dependencies

### **logwatch-7.3-5 - logwatch-7.3-6.el5**

- » Group: **Applications/System**
- » Summary: **A log file analysis program**
- » Description:

Logwatch is a customizable, pluggable log-monitoring system. It will go through your logs for a given period of time and make a report in the areas that you wish with the detail that you wish. Easy to use - works right out of the package on many systems.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **ltrace-0.5-6.45svn.fc6 - ltrace-0.5-7.45svn.el5**

- ▶ Group: **Development/Debuggers**
- ▶ Summary: **Tracks runtime library calls from dynamically linked executables.**
- ▶ Description:

Ltrace is a debugging program which runs a specified command until the command exits. While the command is executing, ltrace intercepts and records both the dynamic library calls called by the executed process and the signals received by the executed process. Ltrace can also intercept and print system calls executed by the process.

You should install ltrace if you need a sysadmin tool for tracking the execution of processes.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **lvm2-2.02.26-3.el5 - lvm2-2.02.40-6.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **Userland logical volume management tools**
- ▶ Description:

LVM2 includes all of the support for handling read/write operations on physical volumes (hard disks, RAID-Systems, magneto optical, etc., multiple devices (MD), see mdadd(8) or even loop devices, see losetup(8)), creating volume groups (kind of virtual disks) from one or more physical volumes and creating one or more logical volumes (kind of logical partitions) in volume groups.

- ▶ Added Dependencies:
  - device-mapper >= 1.02.28-2
- ▶ Removed Dependencies:
  - device-mapper >= 1.02.20-1

#### **lvm2-cluster-2.02.26-1.el5 - lvm2-cluster-2.02.40-7.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **Cluster extensions for userland logical volume management tools**

» Description:

Extensions to LVM2 to support clusters.

» Added Dependencies:

- device-mapper >= 1.02.28-2

» Removed Dependencies:

- device-mapper >= 1.02.20-1

### lynx-2.8.5-28.1 - lynx-2.8.5-28.1.el5\_2.1

» Group: **Applications/Internet**

» Summary: **A text-based Web browser.**

» Description:

Lynx is a text-based Web browser. Lynx does not display any images, but it does support frames, tables, and most other HTML tags. One advantage Lynx has over graphical browsers is speed; Lynx starts and exits quickly and swiftly displays webpages.

» No added dependencies

» No removed dependencies

### m17n-db-1.3.3-46.el5 - m17n-db-1.3.3-48.el5

» Group: **System Environment/Libraries**

» Summary: **Multilingualization datafiles for m17n-lib**

» Description:

This package contains multilingualization (m17n) datafiles for m17n-lib which describe input maps, encoding maps, and OpenType font data for many languages.

» No added dependencies

» No removed dependencies

### m2crypto-0.16-6.el5.1 - m2crypto-0.16-6.el5.3

» Group: **System Environment/Libraries**

» Summary: **Support for using OpenSSL in python scripts**

» Description:

This package allows you to call OpenSSL functions from python scripts.

» No added dependencies

» No removed dependencies

### mailman-2.1.9-2 - mailman-2.1.9-4.el5

» Group: **Applications/Internet**

- » Summary: **Mailing list manager with built in Web access.**
- » Description:

Mailman is software to help manage email discussion lists, much like Majordomo and Smartmail. Unlike most similar products, Mailman gives each mailing list a webpage, and allows users to subscribe, unsubscribe, etc. over the Web. Even the list manager can administer his or her list entirely from the Web. Mailman also integrates most things people want to do with mailing lists, including archiving, mail <-> news gateways, and so on.

Documentation can be found in: `/usr/share/doc/mailman-2.1.9`

When the package has finished installing, you will need to perform some additional installation steps, these are described in:  
`/usr/share/doc/mailman-2.1.9/INSTALL.REDHAT`

- » No added dependencies
- » No removed dependencies

### **make-3.81-1.1 - make-3.81-3.el5**

- » Group: **Development/Tools**
- » Summary: **A GNU tool which simplifies the build process for users.**
- » Description:

A GNU tool for controlling the generation of executables and other non-source files of a program from the program's source files. Make allows users to build and install packages without any significant knowledge about the details of the build process. The details about how the program should be built are provided for make in the program's makefile.

The GNU make tool should be installed on your system because it is commonly used to simplify the process of installing programs.

- » No added dependencies
- » No removed dependencies

### **man-pages-2.39-10.el5 - man-pages-2.39-12.el5**

- » Group: **Documentation**
- » Summary: **Man (manual) pages from the Linux Documentation Project.**
- » Description:

A large collection of man pages (documentation) from the Linux Documentation Project (LDP).

- » No added dependencies
- » No removed dependencies

### **man-pages-ja-20060815-5 - man-pages-ja-20060815-9.el5**

- Group: **Documentation**
- Summary: **Japanese man (manual) pages from the Japanese Manual Project**
- Description:

Japanese Manual pages, translated by JM-Project (Japanese Manual Project).

- No added dependencies
- No removed dependencies

#### **mcstrans-0.2.6-1.el5 - mcstrans-0.2.11-3.el5**

- Group: **System Environment/Daemons**
- Summary: **SELinux Translation Daemon**
- Description:

Security-enhanced Linux is a feature of the Linux® kernel and a number of utilities with enhanced security functionality designed to add mandatory access controls to Linux. The Security-enhanced Linux kernel contains new architectural components originally developed to improve the security of the Flask operating system. These architectural components provide general support for the enforcement of many kinds of mandatory access control policies, including those based on the concepts of Type Enforcement®, Role-based Access Control, and Multi-level Security.

mcstrans provides an translation daemon to translate SELinux categories from internal representations to user defined representation.

- No added dependencies
- No removed dependencies

#### **mdadm-2.5.4-3.el5 - mdadm-2.6.4-1.el5**

- Group: **System Environment/Base**
- Summary: **mdadm controls Linux md devices (software RAID arrays)**
- Description:

mdadm is used to create, manage, and monitor Linux MD (software RAID) devices. As such, it provides similar functionality to the raidtools package. However, mdadm is a single program, and it can perform almost all functions without a configuration file, though a configuration file can be used to help with some common tasks.

- No added dependencies
- No removed dependencies

#### **mesa-6.5.1-7.5.el5 - mesa-6.5.1-7.7.el5**

- Group: **System Environment/Libraries**

- Summary: **Mesa graphics libraries**
- Description:

Mesa

- No added dependencies
- No removed dependencies

#### **metacity-2.16.0-8.el5 - metacity-2.16.0-12.el5**

- Group: **User Interface/Desktops**
- Summary: **Metacity window manager**
- Description:

Metacity is a simple window manager that integrates nicely with GNOME 2.

- No added dependencies
- No removed dependencies

#### **microcode\_ctl-1.17-1.42.el5 - microcode\_ctl-1.17-1.47.el5**

- Group: **System Environment/Base**
- Summary: **Tool to update x86/x86-64 CPU microcode.**
- Description:

microcode\_ctl - updates the microcode on Intel x86/x86-64 CPU's

- No added dependencies
- No removed dependencies

#### **mkinitrd-5.1.19.6-19 - mkinitrd-5.1.19.6-44**

- Group: **System Environment/Base**
- Summary: **Creates an initial ramdisk image for preloading modules.**
- Description:

Mkinitrd creates filesystem images for use as initial ramdisk (initrd) images. These ramdisk images are often used to preload the block device modules (SCSI or RAID) needed to access the root filesystem.

In other words, generic kernels can be built without drivers for any SCSI adapters which load the SCSI driver as a module. Since the kernel needs to read those modules, but in this case it isn't able to address the SCSI adapter, an initial ramdisk is used. The initial ramdisk is loaded by the operating system loader (normally LILO) and is available to the kernel as soon as the ramdisk is loaded. The ramdisk image loads the proper SCSI adapter and allows the kernel to mount the root filesystem. The mkinitrd program creates such a ramdisk using information found in the /etc/modules.conf file.

- Added Dependencies:
  - libdhcp-devel >= 1.20-6
- Removed Dependencies:
  - libdhcp-devel >= 1.9

#### **mlocate-0.15-1.el5 - mlocate-0.15-1.el5.1**

- Group: **Applications/System**
- Summary: **An utility for finding files by name**
- Description:

mlocate is a locate/updatedb implementation. It keeps a database of all existing files and allows you to lookup files by name.

The 'm' stands for "merging": updatedb reuses the existing database to avoid rereading most of the file system, which makes updatedb faster and does not trash the system caches as much as traditional locate implementations.

- No added dependencies
- No removed dependencies

#### **mod\_nss-1.0.3-4.el5 - mod\_nss-1.0.3-6.el5**

- Group: **System Environment/Daemons**
- Summary: **SSL/TLS module for the Apache HTTP server**
- Description:

The mod\_nss module provides strong cryptography for the Apache Web server via the Secure Sockets Layer (SSL) and Transport Layer Security (TLS) protocols using the Network Security Services (NSS) security library.

- No added dependencies
- No removed dependencies

#### **mod\_perl-2.0.2-6.3.el5 - mod\_perl-2.0.4-6.el5**

- Group: **System Environment/Daemons**
- Summary: **An embedded Perl interpreter for the Apache HTTP Server**
- Description:



Mod\_perl incorporates a Perl interpreter into the Apache web server, so that the Apache web server can directly execute Perl code. Mod\_perl links the Perl runtime library into the Apache web server and provides an object-oriented Perl interface for Apache's C language API. The end result is a quicker CGI script turnaround process, since no external Perl interpreter has to be started.

Install mod\_perl if you're installing the Apache web server and you'd like for it to directly incorporate a Perl interpreter.

- ▶ Added Dependencies:
  - perl
  - perl(ExtUtils::Embed)
- ▶ Removed Dependencies:
  - perl >= 1:5.6.1

### **module-init-tools-3.3-0.pre3.1.34.el5 - module-init-tools-3.3-0.pre3.1.42.el5**

- ▶ Group: **System Environment/Kernel**
- ▶ Summary: **Kernel module management utilities.**
- ▶ Description:

The modutils package includes various programs needed for automatic loading and unloading of modules under 2.6 and later kernels, as well as other module management programs. Device drivers and filesystems are two examples of loaded and unloaded modules.

- ▶ No added dependencies
- ▶ No removed dependencies

### **mozldap-6.0.4-1.el5 - mozldap-6.0.5-1.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **Mozilla LDAP C SDK**
- ▶ Description:

The Mozilla LDAP C SDK is a set of libraries that allow applications to communicate with LDAP directory servers. These libraries are derived from the University of Michigan and Netscape LDAP libraries. They use Mozilla NSPR and NSS for crypto.

- ▶ No added dependencies
- ▶ No removed dependencies

### **mysql-5.0.22-2.1.0.1 - mysql-5.0.45-7.el5**

- ▶ Group: **Applications/Databases**
- ▶ Summary: **MySQL client programs and shared libraries.**
- ▶ Description:

MySQL is a multi-user, multi-threaded SQL database server. MySQL is a client/server implementation consisting of a server daemon (mysqld) and many different client programs and libraries. The base package contains the MySQL client programs, the client shared libraries, and generic MySQL files.

- » Added Dependencies:
  - gawk
- » No removed dependencies

#### **nautilus-2.16.2-6.el5 - nautilus-2.16.2-7.el5**

- » Group: **User Interface/Desktops**
- » Summary: **Nautilus is a file manager for GNOME.**
- » Description:

Nautilus integrates access to files, applications, media, Internet-based resources and the Web. Nautilus delivers a dynamic and rich user experience. Nautilus is an free software project developed under the GNU General Public License and is a core component of the GNOME desktop project.

- » No added dependencies
- » No removed dependencies

#### **neon-0.25.5-5.1 - neon-0.25.5-10.el5**

- » Group: **Applications/Publishing**
- » Summary: **An HTTP and WebDAV client library**
- » Description:

neon is an HTTP and WebDAV client library, with a C interface; providing a high-level interface to HTTP and WebDAV methods along with a low-level interface for HTTP request handling. neon supports persistent connections, proxy servers, basic, digest and Kerberos authentication, and has complete SSL support.

- » No added dependencies
- » No removed dependencies

#### **net-snmp-5.3.1-19.el5 - net-snmp-5.3.2.2-5.el5**

- » Group: **System Environment/Daemons**
- » Summary: **A collection of SNMP protocol tools and libraries.**
- » Description:

SNMP (Simple Network Management Protocol) is a protocol used for network management. The NET-SNMP project includes various SNMP tools: an extensible agent, an SNMP library, tools for requesting or setting information from SNMP agents, tools for generating and handling SNMP traps, a version of the netstat command which uses SNMP, and a Tk/Perl mib browser. This package contains the snmpd and snmptrapd daemons, documentation, etc.

You will probably also want to install the net-snmp-utils package, which contains NET-SNMP utilities.

Building option:

--without tcp\_wrappers : disable tcp\_wrappers support

- ▶ No added dependencies
- ▶ No removed dependencies

### **net-tools-1.60-73 - net-tools-1.60-78.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **Basic networking tools.**
- ▶ Description:

The net-tools package contains basic networking tools, including ifconfig, netstat, route, and others.

- ▶ No added dependencies
- ▶ No removed dependencies

### **newt-0.52.2-9 - newt-0.52.2-12.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **A development library for text mode user interfaces.**
- ▶ Description:

Newt is a programming library for color text mode, widget based user interfaces. Newt can be used to add stacked windows, entry widgets, checkboxes, radio buttons, labels, plain text fields, scrollbars, etc., to text mode user interfaces. This package also contains the shared library needed by programs built with newt, as well as a /usr/bin/dialog replacement called whiptail. Newt is based on the slang library.

- ▶ No added dependencies
- ▶ No removed dependencies

### **nfs-utils-1.0.9-24.el5 - nfs-utils-1.0.9-40.el5**

- ▶ Group: **System Environment/Daemons**
- ▶ Summary: **NFS utilities and supporting clients and daemons for the kernel NFS server.**
- ▶ Description:

The `nfs-utils` package provides a daemon for the kernel NFS server and related tools, which provides a much higher level of performance than the traditional Linux NFS server used by most users.

This package also contains the `showmount` program. `Showmount` queries the mount daemon on a remote host for information about the NFS (Network File System) server on the remote host. For example, `showmount` can display the clients which are mounted on that host.

This package also contains the `mount.nfs` and `umount.nfs` program.

- ▶ Added Dependencies:
  - `tcp_wrappers`
- ▶ No removed dependencies

#### **notification-daemon-0.3.5-8.el5 - notification-daemon-0.3.5-9.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **Notification Daemon**
- ▶ Description:

`notification-daemon` is the server implementation of the `freedesktop.org` desktop notification specification.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **nspr-4.6.5-3.el5 - nspr-4.7.3-2.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **Netscape Portable Runtime**
- ▶ Description:

NSPR provides platform independence for non-GUI operating system facilities. These facilities include threads, thread synchronization, normal file and network I/O, interval timing and calendar time, basic memory management (`malloc` and `free`) and shared library linking.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **nss-3.11.7-1.3.el5 - nss-3.12.2.0-2.el5**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **Network Security Services**
- ▶ Description:

Network Security Services (NSS) is a set of libraries designed to support cross-platform development of security-enabled client and server applications. Applications built with NSS can support SSL v2 and v3, TLS, PKCS #5, PKCS #7, PKCS #11, PKCS #12, S/MIME, X.509 v3 certificates, and other security standards.

- ▶ Added Dependencies:
  - nspr-devel >= 4.6.99
  - zlib-devel
- ▶ Removed Dependencies:
  - nspr-devel >= 4.6.2

### **nss\_db-2.2-35.1 - nss\_db-2.2-35.3**

- ▶ Group: **System Environment/Libraries**
- ▶ Summary: **An NSS library for the Berkeley DB.**
- ▶ Description:

Nss\_db is a set of C library extensions which allow Berkeley Databases to be used as a primary source of aliases, ethers, groups, hosts, networks, protocol, users, RPCs, services, and shadow passwords (instead of or in addition to using flat files or NIS). Install nss\_db if your flat name service files are too large and lookups are slow.

- ▶ No added dependencies
- ▶ No removed dependencies

### **nss\_ldap-253-5.el5 - nss\_ldap-253-17.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **NSS library and PAM module for LDAP.**
- ▶ Description:

This package includes two LDAP access clients: nss\_ldap and pam\_ldap. Nss\_ldap is a set of C library extensions that allow X.500 and LDAP directory servers to be used as a primary source of aliases, ethers, groups, hosts, networks, protocol, users, RPCs, services, and shadow passwords (instead of or in addition to using flat files or NIS).

Pam\_ldap is a module for Linux-PAM that supports password changes, V2 clients, Netscape's SSL, ypldapd, Netscape Directory Server password policies, access authorization, and crypted hashes.

- ▶ Added Dependencies:
  - fipscheck-devel
  - keyutils-libs-devel
  - libselinux-devel
- ▶ No removed dependencies

### **ntp-4.2.2p1-7.el5 - ntp-4.2.2p1-9.el5**

- Group: **System Environment/Daemons**
- Summary: **Synchronizes system time using the Network Time Protocol (NTP).**
- Description:

The Network Time Protocol (NTP) is used to synchronize a computer's time with another reference time source. The ntp package contains utilities and daemons that will synchronize your computer's time to Coordinated Universal Time (UTC) via the NTP protocol and NTP servers. The ntp package includes ntpdate (a program for retrieving the date and time from remote machines via a network) and ntpd (a daemon which continuously adjusts system time).

Install the ntp package if you need tools for keeping your system's time synchronized via the NTP protocol.

- Added Dependencies:
  - perl-HTML-Parser
- No removed dependencies

#### **numactl-0.9.8-2.el5 - numactl-0.9.8-7.el5**

- Group: **System Environment/Base**
- Summary: **library for tuning for Non Uniform Memory Access machines**
- Description:

Simple NUMA policy support. It consists of a numactl program to run other programs with a specific NUMA policy and a libnuma to do allocations with NUMA policy in applications.

- No added dependencies
- No removed dependencies

#### **oddjob-0.27-7 - oddjob-0.27-9.el5**

- Group: **System Environment/Daemons**
- Summary: **A D-BUS service which runs odd jobs on behalf of client applications**
- Description:

oddjob is a D-BUS service which performs particular tasks for clients which connect to it and issue requests using the system-wide message bus.

- No added dependencies
- No removed dependencies

#### **openCryptoki-2.2.4-16.el5 - openCryptoki-2.2.4-22.el5**

- Group: **Productivity/Security**
- Summary: **Implementation of Cryptoki v2.11 for IBM Crypto Hardware**

## » Description:

The PKCS#11 Version 2.11 api implemented for the IBM Crypto cards. This package includes support for the IBM 4758 Cryptographic CoProcessor (with the PKCS#11 firmware loaded) and the IBM eServer Cryptographic Accelerator (FC 4960 on pSeries)

## » Added Dependencies:

- trousers-devel

## » No removed dependencies

**openais-0.80.3-7.el5 - openais-0.80.3-22.el5**» Group: **System Environment/Base**» Summary: **The openais Standards-Based Cluster Framework executive and APIs**

## » Description:

This package contains the openais executive, openais service handlers, default configuration files and init script.

## » No added dependencies

## » No removed dependencies

**openhpi-2.8.1-2.el5.7 - openhpi-2.10.2-1.el5**» Group: **System Environment/Base**» Summary: **openhpi Hardware Platform Interface (HPI) library and tools**

## » Description:

OpenHPI is an open source project created with the intent of providing an implementation of the SA Forum's Hardware Platform Interface (HPI). HPI provides an abstracted interface to managing computer hardware, typically for chassis and rack based servers. HPI includes resource modeling; access to and control over sensor, control, watchdog, and inventory data associated with resources; abstracted System Event Log interfaces; hardware events and alerts; and a managed hotswap interface.

OpenHPI provides a modular mechanism for adding new hardware and device support easily. Many plugins exist in the OpenHPI source tree to provide access to various types of hardware. This includes, but is not limited to, IPMI based servers, Blade Center, and machines which export data via sysfs.

## » No added dependencies

- » No removed dependencies

### **openib-1.2-6.el5 - openib-1.3.2-0.20080728.0355.3.el5**

- » Group: **System Environment/Base**
- » Summary: **OpenIB Infiniband Driver Stack**
- » Description:

User space initialization scripts for the kernel InfiniBand drivers

- » No added dependencies
- » Removed Dependencies:
  - autoconf
  - automake
  - libsysfs-devel
  - libtool
  - pciutils-devel
  - zlib-devel

### **openldap-2.3.27-8 - openldap-2.3.43-3.el5**

- » Group: **System Environment/Daemons**
- » Summary: **The configuration files, libraries, and documentation for OpenLDAP.**
- » Description:

OpenLDAP is an open source suite of LDAP (Lightweight Directory Access Protocol) applications and development tools. LDAP is a set of protocols for accessing directory services (usually phone book style information, but other information is possible) over the Internet, similar to the way DNS (Domain Name System) information is propagated over the Internet. The openldap package contains configuration files, libraries, and documentation for OpenLDAP.

- » No added dependencies
- » No removed dependencies

### **openmotif-2.3.0-0.3.el5 - openmotif-2.3.1-2.el5**

- » Group: **System Environment/Libraries**
- » Summary: **Open Motif runtime libraries and executables.**
- » Description:

This is the Open Motif 2.3.1 runtime environment. It includes the Motif shared libraries, needed to run applications which are dynamically linked against Motif, and the Motif Window Manager "mwm".

- » No added dependencies
- » No removed dependencies



**openmpi-1.2.3-4.el5 - openmpi-1.2.7-6.el5**

- » Group: **Development/Libraries**
- » Summary: **Open Message Passing Interface**
- » Description:

Open MPI is an open source, freely available implementation of both the MPI-1 and MPI-2 standards, combining technologies and resources from several other projects (FT-MPI, LA-MPI, LAM/MPI, and PACX-MPI) in order to build the best MPI library available. A completely new MPI-2 compliant implementation, Open MPI offers advantages for system and software vendors, application developers, and computer science researchers. For more information, see <http://www.open-mpi.org/> .

- » Added Dependencies:
  - compat-dapl-devel
- » Removed Dependencies:
  - dapl-devel
  - libsysfs-devel

**openssh-4.3p2-24.el5 - openssh-4.3p2-29.el5**

- » Group: **Applications/Internet**
- » Summary: **The OpenSSH implementation of SSH protocol versions 1 and 2**
- » Description:

SSH (Secure SHell) is a program for logging into and executing commands on a remote machine. SSH is intended to replace rlogin and rsh, and to provide secure encrypted communications between two untrusted hosts over an insecure network. X11 connections and arbitrary TCP/IP ports can also be forwarded over the secure channel.

OpenSSH is OpenBSD's version of the last free version of SSH, bringing it up to date in terms of security and features, as well as removing all patented algorithms to separate libraries.

This package includes the core files necessary for both the OpenSSH client and server. To make this package useful, you should also install openssh-clients, openssh-server, or both.

- » Added Dependencies:
  - openssl-devel >= 0.9.8e
- » Removed Dependencies:
  - openssl-devel

**openssl-0.9.8b-8.3.el5\_0.2 - openssl-0.9.8e-7.el5**

- » Group: **System Environment/Libraries**
- » Summary: **The OpenSSL toolkit**
- » Description:

The OpenSSL toolkit provides support for secure communications between machines. OpenSSL includes a certificate management tool and shared libraries which provide various cryptographic algorithms and protocols.

- » Added Dependencies:
  - fipscheck
- » No removed dependencies

#### **openssl097a-0.9.7a-9 - openssl097a-0.9.7a-9.el5\_2.1**

- » Group: **System Environment/Libraries**
- » Summary: **The OpenSSL toolkit**
- » Description:

The OpenSSL toolkit provides support for secure communications between machines. OpenSSL includes a certificate management tool and shared libraries which provide various cryptographic algorithms and protocols.

- » No added dependencies
- » No removed dependencies

#### **oprofile-0.9.2-6.el5 - oprofile-0.9.3-18.el5**

- » Group: **Development/System**
- » Summary: **System wide profiler**
- » Description:

OProfile is a profiling system for systems running Linux. The profiling runs transparently during the background, and profile data can be collected at any time. OProfile makes use of the hardware performance counters provided on Intel P6, and AMD Athlon family processors, and can use the RTC for profiling on other x86 processor types.

See the HTML documentation for further details.

- » No added dependencies
- » No removed dependencies

#### **pam-0.99.6.2-3.26.el5 - pam-0.99.6.2-4.el5**

- » Group: **System Environment/Base**
- » Summary: **A security tool which provides authentication for applications**
- » Description:

PAM (Pluggable Authentication Modules) is a system security tool that allows system administrators to set authentication policy without having to recompile programs that handle authentication.

- » Added Dependencies:
  - audit-libs-devel >= 1.6.5
  - kernel-headers >= 2.6.18-114
- » Removed Dependencies:
  - audit-libs-devel >= 1.0.8

#### **pam\_krb5-2.2.14-1 - pam\_krb5-2.2.14-10**

- » Group: **System Environment/Base**
- » Summary: **A Pluggable Authentication Module for Kerberos 5.**
- » Description:

This is pam\_krb5, a pluggable authentication module that can be used with Linux-PAM and Kerberos 5. This module supports password checking, ticket creation, and optional TGT verification and conversion to Kerberos IV tickets.  
The included pam\_krb5afs module also gets AFS tokens if so configured.

- » Added Dependencies:
  - autoconf
  - automake
  - libtool
- » No removed dependencies

#### **paps-0.6.6-17.el5 - paps-0.6.6-18.el5**

- » Group: **Applications/Publishing**
- » Summary: **Plain Text to PostScript converter**
- » Description:

paps is a PostScript converter from plain text file using Pango.

- » No added dependencies
- » No removed dependencies

#### **parted-1.8.1-12.el5 - parted-1.8.1-23.el5**

- » Group: **Applications/System**
- » Summary: **The GNU disk partition manipulation program**
- » Description:

The GNU Parted program allows you to create, destroy, resize, move, and copy hard disk partitions. Parted can be used for creating space for new operating systems, reorganizing disk usage, and copying data to new hard disks.

- » No added dependencies
- » No removed dependencies

#### patch-2.5.4-29.2.2 - patch-2.5.4-29.2.3.el5

- » Group: **Development/Tools**
- » Summary: **The GNU patch command, for modifying/upgrading files.**
- » Description:

The patch program applies diff files to originals. The diff command is used to compare an original to a changed file. Diff lists the changes made to the file. A person who has the original file can then use the patch command with the diff file to add the changes to their original file (patching the file).

Patch should be installed because it is a common way of upgrading applications.

- » No added dependencies
- » No removed dependencies

#### pciutils-2.2.3-4 - pciutils-2.2.3-5

- » Group: **Applications/System**
- » Summary: **PCI bus related utilities.**
- » Description:

The pciutils package contains various utilities for inspecting and setting devices connected to the PCI bus. The utilities provided require kernel version 2.1.82 or newer (which support the /proc/bus/pci interface).

- » No added dependencies
- » No removed dependencies

#### pcre-6.6-1.1 - pcre-6.6-2.el5\_1.7

- » Group: **System Environment/Libraries**
- » Summary: **Perl-compatible regular expression library**
- » Description:

Perl-compatible regular expression library.  
PCRE has its own native API, but a set of "wrapper" functions that are based on the POSIX API are also supplied in the library libpcreposix. Note that this just provides a POSIX calling interface to PCRE: the regular expressions themselves still follow Perl syntax and semantics. The header file for the POSIX-style functions is called pcreposix.h.

- » No added dependencies

- » No removed dependencies

#### **pcsc-lite-1.3.1-7 - pcsc-lite-1.4.4-0.1.el5**

- » Group: **System Environment/Daemons**
- » Summary: **PC/SC Lite smart card framework and applications**
- » Description:

The purpose of PC/SC Lite is to provide a Windows(R) SCard interface in a very small form factor for communicating to smartcards and readers. PC/SC Lite uses the same winscard API as used under Windows(R). This package includes the PC/SC Lite daemon, a resource manager that coordinates communications with smart card readers and smart cards that are connected to the system, as well as other command line tools.

- » No added dependencies
- » No removed dependencies

#### **perl-5.8.8-10 - perl-5.8.8-18.el5**

- » Group: **Development/Languages**
- » Summary: **The Perl programming language**
- » Description:

Perl is a high-level programming language with roots in C, sed, awk and shell scripting. Perl is good at handling processes and files, and is especially good at handling text. Perl's hallmarks are practicality and efficiency. While it is used to do a lot of different things, Perl's most common applications are system administration utilities and web programming. A large proportion of the CGI scripts on the web are written in Perl. You need the perl package installed on your system so that your system can handle Perl scripts.

Install this package if you want to program in Perl or enable your system to handle Perl scripts.

- » No added dependencies
- » No removed dependencies

#### **perl-DBD-MySQL-3.0007-1.fc6 - perl-DBD-MySQL-3.0007-2.el5**

- » Group: **Development/Libraries**
- » Summary: **A MySQL interface for perl**
- » Description:

An implementation of DBI for MySQL for Perl.

- » Added Dependencies:
  - perl-DBI >= 1.52-2
- » Removed Dependencies:

- perl(DBI)

### perl-DBD-Pg-1.49-1.fc6 - perl-DBD-Pg-1.49-2.el5

- » Group: **Development/Libraries**
- » Summary: **A PostgreSQL interface for perl**
- » Description:

An implementation of DBI for PostgreSQL for Perl.

- » Added Dependencies:
  - perl-DBI >= 1.52-2
- » Removed Dependencies:
  - perl-DBI >= 1.38

### perl-DBI-1.52-1.fc6 - perl-DBI-1.52-2.el5

- » Group: **Development/Libraries**
- » Summary: **A database access API for perl**
- » Description:

DBI is a database access Application Programming Interface (API) for the Perl Language. The DBI API Specification defines a set of functions, variables and conventions that provide a consistent database interface independent of the actual database being used.

- » No added dependencies
- » No removed dependencies

### pfmon-3.2-0.060926.4.el5 - pfmon-3.2-0.060926.5.el5

- » Group: **Development/Tools**
- » Summary: **a performance monitoring tool for Linux/ia64**
- » Description:

This package contains pfmon 3.x, a tool to monitor performance using the Performance Monitor Unit (PMU). Pfmon can monitor standalone programs or the entire system on both UP and SMP Linux systems.  
This version of pfmon requires a kernel perfmon-2.x (found in 2.6 kernels) subsystem to function properly.

- » No added dependencies
- » No removed dependencies

### php-5.1.6-15.el5 - php-5.1.6-23.el5

- » Group: **Development/Languages**

- » Summary: **The PHP HTML-embedded scripting language. (PHP: Hypertext Preprocessor)**

- » Description:

PHP is an HTML-embedded scripting language. PHP attempts to make it easy for developers to write dynamically generated webpages. PHP also offers built-in database integration for several commercial and non-commercial database management systems, so writing a database-enabled webpage with PHP is fairly simple. The most common use of PHP coding is probably as a replacement for CGI scripts.

The php package contains the module which adds support for the PHP language to Apache HTTP Server.

- » No added dependencies
- » No removed dependencies

#### **php-pear-1.4.9-4 - php-pear-1.4.9-4.el5.1**

- » Group: **System**
- » Summary: **PHP Extension and Application Repository framework**
- » Description:

PEAR is a framework and distribution system for reusable PHP components. This package contains the basic PEAR components.

- » No added dependencies
- » No removed dependencies

#### **piranha-0.8.4-7.el5 - piranha-0.8.4-11.el5**

- » Group: **System Environment/Base**
- » Summary: **Cluster administration tools**
- » Description:

Various tools to administer and configure the Linux Virtual Server as well as heartbeating and failover components. The LVS is a dynamically adjusted kernel routing mechanism that provides load balancing primarily for web and ftp servers though other services are supported.

- » No added dependencies
- » No removed dependencies

#### **pirut-1.2.10-1.el5 - pirut-1.3.28-13.el5**

- » Group: **Applications/System**
- » Summary: **Package Installation, Removal and Update Tools**
- » Description:

pirut (pronounced "pirate") provides a set of graphical tools for managing software.

- » No added dependencies
- » No removed dependencies

#### pkgconfig-0.21-1.fc6 - pkgconfig-0.21-2.el5

- » Group: **Development/Tools**
- » Summary: **A tool for determining compilation options.**
- » Description:

The pkgconfig tool determines compilation options. For each required library, it reads the configuration file and outputs the necessary compiler and linker flags.

- » No added dependencies
- » No removed dependencies

#### pkinit-nss-0.7.3-1.el5 - pkinit-nss-0.7.6-1.el5

- » Group: **System Environment/Libraries**
- » Summary: **PKINIT for MIT Kerberos**
- » Description:

The pkinit-nss package implements the PKINIT standard for MIT Kerberos. It does so using the Mozilla NSS library.

- » No added dependencies
- » No removed dependencies

#### pm-utils-0.99.3-6.el5.17 - pm-utils-0.99.3-10.el5

- » Group: **System Environment/Base**
- » Summary: **Power management utilities and scripts for Fedora Core**
- » Description:

The pm-utils package contains utilities and scripts for Fedora Core useful for power management.

- » No added dependencies
- » No removed dependencies

#### policycoreutils-1.33.12-12.el5 - policycoreutils-1.33.12-14.2.el5

- » Group: **System Environment/Base**
- » Summary: **SELinux policy core utilities.**



» **Description:**

Security-enhanced Linux is a feature of the Linux® kernel and a number of utilities with enhanced security functionality designed to add mandatory access controls to Linux. The Security-enhanced Linux kernel contains new architectural components originally developed to improve the security of the Flask operating system. These architectural components provide general support for the enforcement of many kinds of mandatory access control policies, including those based on the concepts of Type Enforcement®, Role-based Access Control, and Multi-level Security.

policycoreutils contains the policy core utilities that are required for basic operation of a SELinux system. These utilities include load\_policy to load policies, setfiles to label filesystems, newrole to switch roles, and run\_init to run /etc/init.d scripts in the proper context.

- » No added dependencies
- » No removed dependencies

**poppler-0.5.4-4.1.el5 - poppler-0.5.4-4.4.el5\_1**

- » Group: **Development/Libraries**
- » Summary: **PDF rendering library**
- » Description:

Poppler, a PDF rendering library, it's a fork of the xpdf PDF viewer developed by Derek Noonburg of Glyph and Cog, LLC.

- » No added dependencies
- » No removed dependencies

**postfix-2.3.3-2 - postfix-2.3.3-2.1.el5\_2**

- » Group: **System Environment/Daemons**
- » Summary: **Postfix Mail Transport Agent**
- » Description:

Postfix is a Mail Transport Agent (MTA), supporting LDAP, SMTP AUTH (SASL),  
TLS

- » No added dependencies
- » No removed dependencies

**postgresql-8.1.9-1.el5 - postgresql-8.1.11-1.el5\_1.1**

- » Group: **Applications/Databases**
- » Summary: **PostgreSQL client programs and libraries.**
- » Description:

PostgreSQL is an advanced Object-Relational database management system (DBMS) that supports almost all SQL constructs (including transactions, subselects and user-defined types and functions). The postgresql package includes the client programs and libraries that you'll need to access a PostgreSQL DBMS server. These PostgreSQL client programs are programs that directly manipulate the internal structure of PostgreSQL databases on a PostgreSQL server. These client programs can be located on the same machine with the PostgreSQL server, or may be on a remote machine which accesses a PostgreSQL server over a network connection. This package contains the docs in HTML for the whole package, as well as command-line utilities for managing PostgreSQL databases on a PostgreSQL server.

If you want to manipulate a PostgreSQL database on a remote PostgreSQL server, you need this package. You also need to install this package if you're installing the postgresql-server package.

- » No added dependencies
- » No removed dependencies

### ppc64-utils-0.11-2 - ppc64-utils-0.11-10.el5

- » Group: **System Environment/Base**
- » Summary: **Linux/PPC64 specific utilities**
- » Description:

A collection of utilities for Linux on PPC64 platforms.

- » Added Dependencies:
  - db4-devel
  - librtas-devel >= 1.3.3
  - libstdc++-devel
  - libtool
  - sg3\_utils-devel
  - zlib-devel
- » Removed Dependencies:
  - librtas-devel

### ppp-2.4.4-1.el5 - ppp-2.4.4-2.el5

- » Group: **System Environment/Daemons**
- » Summary: **The PPP (Point-to-Point Protocol) daemon.**
- » Description:

The ppp package contains the PPP (Point-to-Point Protocol) daemon and documentation for PPP support. The PPP protocol provides a method for transmitting datagrams over serial point-to-point links. PPP is usually used to dial in to an ISP (Internet Service Provider) or other organization over a modem and phone line.

- » No added dependencies

- » No removed dependencies

### **prelink-0.3.9-2.1 - prelink-0.4.0-2.el5**

- » Group: **System Environment/Base**
- » Summary: **An ELF prelinking utility**
- » Description:

The prelink package contains a utility which modifies ELF shared libraries and executables, so that far fewer relocations need to be resolved at runtime and thus programs come up faster.

- » No added dependencies
- » No removed dependencies

### **privoxy-3.0.3-9.2.2 - privoxy-3.0.3-9.3.el5**

- » Group: **System Environment/Daemons**
- » Summary: **Privoxy - privacy enhancing proxy**
- » Description:

Privoxy is a web proxy with advanced filtering capabilities for protecting privacy, filtering web page content, managing cookies, controlling access, and removing ads, banners, pop-ups and other obnoxious Internet junk. Privoxy has a very flexible configuration and can be customized to suit individual needs and tastes. Privoxy has application for both stand-alone systems and multi-user networks.

Privoxy is based on the Internet Junkbuster.

- » Added Dependencies:
  - pcre-devel
- » No removed dependencies

### **procps-3.2.7-8.1.el5 - procps-3.2.7-11.1.el5**

- » Group: **Applications/System**
- » Summary: **System and process monitoring utilities.**
- » Description:

The procs package contains a set of system utilities that provide system information. Procs includes ps, free, skill, pkill, pgrep, snice, tload, top, uptime, vmstat, w, watch and pdwx. The ps command displays a snapshot of running processes. The top command provides a repetitive update of the statuses of running processes. The free command displays the amounts of free and used memory on your system. The skill command sends a terminate command (or another specified signal) to a specified set of processes. The snice command is used to change the scheduling priority of specified processes. The tload command prints a graph of the current system load average to a specified tty. The uptime command displays the current time, how long the system has been running, how many users are logged on, and system load averages for the past one, five, and fifteen minutes. The w command displays a list of the users who are currently logged on and what they are running. The watch program watches a running program. The vmstat command displays virtual memory statistics about processes, memory, paging, block I/O, traps, and CPU activity. The pdwx command reports the current working directory of a process or processes.

- » No added dependencies
- » No removed dependencies

#### **psacct-6.3.2-41.1 - psacct-6.3.2-44.el5**

- » Group: **Applications/System**
- » Summary: **Utilities for monitoring process activities.**
- » Description:

The psacct package contains several utilities for monitoring process activities, including ac, lastcomm, accton and sa. The ac command displays statistics about how long users have been logged on. The lastcomm command displays information about previous executed commands. The accton command turns process accounting on or off. The sa command summarizes information about previously executed commands.

- » No added dependencies
- » No removed dependencies

#### **psmisc-22.2-5 - psmisc-22.2-6**

- » Group: **Applications/System**
- » Summary: **Utilities for managing processes on your system.**
- » Description:

The psmisc package contains utilities for managing processes on your system: pstree, killall and fuser. The pstree command displays a tree structure of all of the running processes on your system. The killall command sends a specified signal (SIGTERM if nothing is specified) to processes identified by name. The fuser command identifies the PIDs of processes that are using specified files or filesystems.

- » No added dependencies

- » No removed dependencies

### **pygtk2-2.10.1-8.el5 - pygtk2-2.10.1-12.el5**

- » Group: **Development/Languages**
- » Summary: **Python bindings for the GTK+ widget set.**
- » Description:

PyGTK is an extension module for python that gives you access to the GTK+ widget set. Just about anything you can write in C with GTK+ you can write in python with PyGTK (within reason), but with all the benefits of python.

- » No added dependencies
- » No removed dependencies

### **pykickstart-0.43-1.el5 - pykickstart-0.43.3-1.el5**

- » Group: **System Environment/Libraries**
- » Summary: **A python library for manipulating kickstart files**
- » Description:

The pykickstart package is a python library for manipulating kickstart files.

- » No added dependencies
- » No removed dependencies

### **python-2.4.3-19.el5 - python-2.4.3-24.el5**

- » Group: **Development/Languages**
- » Summary: **An interpreted, interactive, object-oriented programming language.**
- » Description:

Python is an interpreted, interactive, object-oriented programming language often compared to Tcl, Perl, Scheme or Java. Python includes modules, classes, exceptions, very high level dynamic data types and dynamic typing. Python supports interfaces to many system calls and libraries, as well as to various windowing systems (X11, Motif, Tk, Mac and MFC).

Programmers can write new built-in modules for Python in C or C++. Python can be used as an extension language for applications that need a programmable interface. This package contains most of the standard Python modules, as well as modules for interfacing to the Tix widget set for Tk and RPM.

Note that documentation for Python is provided in the python-docs package.

- No added dependencies
- No removed dependencies

### python-pyblock-0.26-1.el5 - python-pyblock-0.26-3.el5

- Group: **System Environment/Libraries**
- Summary: **Python modules for dealing with block devices**
- Description:

The pyblock contains Python modules for dealing with block devices.

- Added Dependencies:
  - dmraid-devel >= 1.0.0.rc13-14
- Removed Dependencies:
  - dmraid-devel >= 1.0.0.rc11-FC6.3

### python-urlgrabber-3.1.0-2 - python-urlgrabber-3.1.0-5.el5

- Group: **Development/Libraries**
- Summary: **A high-level cross-protocol url-grabber**
- Description:

A high-level cross-protocol url-grabber for python supporting HTTP, FTP and file locations. Features include keepalive, byte ranges, throttling, authentication, proxies and more.

- No added dependencies
- No removed dependencies

### python-virtinst-0.103.0-3.el5 - python-virtinst-0.300.2-12.el5

- Group: **Development/Libraries**
- Summary: **Python modules for starting Xen guest installations**
- Description:

virtinst is a module to help in starting installations of Fedora/Red Hat Enterprise Linux related distributions inside of virtual machines. It supports both paravirt guests (for which only FC and RHEL guests are currently supported) as well as fully virtualized guests. It uses libvirt (<http://www.libvirt.org>) for starting things.

Also contained is a simple script virt-install which uses virtinst in a command line mode.

- Added Dependencies:
  - gettext
  - python
- Removed Dependencies:
  - python-devel

**quota-3.13-1.2.3.2.el5 - quota-3.13-1.2.5.el5**

- Group: **System Environment/Base**
- Summary: **System administration tools for monitoring users' disk usage.**
- Description:

The quota package contains system administration tools for monitoring and limiting user and or group disk usage per filesystem.

- No added dependencies
- No removed dependencies

**rdate-1.4-6 - rdate-1.4-8.el5**

- Group: **Applications/System**
- Summary: **Tool for getting the date/time from a remote machine.**
- Description:

The rdate utility retrieves the date and time from another machine on your network, using the protocol described in RFC 868. If you run rdate as root, it will set your machine's local time to the time of the machine that you queried.

- No added dependencies
- No removed dependencies

**rdesktop-1.4.1-4 - rdesktop-1.4.1-6**

- Group: **User Interface/Desktops**
- Summary: **X client for remote desktop into Windows Terminal Server**
- Description:

rdesktop is an open source client for Windows NT Terminal Server and Windows 2000 & 2003 Terminal Services, capable of natively speaking Remote Desktop Protocol (RDP) in order to present the user's NT desktop. Unlike Citrix ICA, no server extensions are required.

- No added dependencies
- No removed dependencies

**redhat-menus-6.7.8-2.el5 - redhat-menus-6.7.8-3.el5**

- Group: **User Interface/Desktops**
- Summary: **Configuration and data files for the desktop menus**
- Description:

This package contains the XML files that describe the menu layout for GNOME and KDE, and the .desktop files that define the names and icons of "subdirectories" in the menus.

- No added dependencies
- No removed dependencies

#### **redhat-release-5Server-5.1.0.2 - redhat-release-5Server-5.3.0.3**

- Group: **System Environment/Base**
- Summary: **Red Hat Enterprise Linux release file**
- Description:

Red Hat Enterprise Linux release files

- No added dependencies
- No removed dependencies

#### **redhat-release-notes-5Server-9 - redhat-release-notes-5Server-25**

- Group: **System Environment/Base**
- Summary: **Red Hat Enterprise Linux release notes files**
- Description:

Red Hat Enterprise Linux release notes files.

- No added dependencies
- No removed dependencies

#### **redhat-rpm-config-8.0.45-22.el5 - redhat-rpm-config-8.0.45-29.el5**

- Group: **Development/System**
- Summary: **Red Hat specific rpm configuration files.**
- Description:

Red Hat specific rpm configuration files.

- No added dependencies
- No removed dependencies

#### **rgmanager-2.0.31-1.el5 - rgmanager-2.0.46-1.el5**

- Group: **System Environment/Base**
- Summary: **Open Source HA Resource Group Failover for Red Hat Enterprise Linux**
- Description:



Red Hat Resource Group Manager provides high availability of critical server applications in the event of planned or unplanned system downtime.

- » Added Dependencies:
  - slang-devel
- » No removed dependencies

#### **rhel-instnum-1.0.7-1.el5 - rhel-instnum-1.0.9-1.el5**

- » Group: **System Environment/Base**
- » Summary: **A library for decoding RHEL installation numbers**
- » Description:

rhel-instnum provides methods for decoding RHEL installation numbers

- » No added dependencies
- » Removed Dependencies:
  - python

#### **rhn-client-tools-0.4.16-1.el5 - rhn-client-tools-0.4.19-17.el5**

- » Group: **System Environment/Base**
- » Summary: **Support programs and libraries for Red Hat Network**
- » Description:

Red Hat Network Client Tools provides programs and libraries to allow your system to receive software updates from Red Hat Network.

- » No added dependencies
- » No removed dependencies

#### **rhnlb-2.2.5-1.el5 - rhnlb-2.2.6-2.el5**

- » Group: **Development/Libraries**
- » Summary: **Python libraries for the RHN project**
- » Description:

rhnlb is a collection of python modules used by the Red Hat Network (<http://rhn.redhat.com>) software.

- » No added dependencies
- » No removed dependencies

#### **rhpxl-0.41.1-1.el5 - rhpxl-0.41.1-7.el5**

- » Group: **System Environment/Libraries**
- » Summary: **Python library for configuring and running X.**

» Description:

The rhpxl (pronounced 'rapunzel') package contains a Python library for configuring and running X.

- » No added dependencies
- » No removed dependencies

### **rpm-4.4.2-47.el5 - rpm-4.4.2.3-9.el5**

- » Group: **System Environment/Base**
- » Summary: **The RPM package management system**
- » Description:

The RPM Package Manager (RPM) is a powerful command line driven package management system capable of installing, uninstalling, verifying, querying, and updating software packages. Each software package consists of an archive of files along with information about the package like its version, a description, etc.

- » Added Dependencies:
  - doxygen
  - gawk
  - nss-devel
  - redhat-rpm-config
- » Removed Dependencies:
  - autoconf
  - beecrypt-devel >= 4.1.2
  - sed

### **rsh-0.17-37.el5 - rsh-0.17-38.el5**

- » Group: **Applications/Internet**
- » Summary: **Clients for remote access commands (rsh, rlogin, rcp).**
- » Description:

The rsh package contains a set of programs which allow users to run commands on remote machines, login to other machines and copy files between machines (rsh, rlogin and rcp). All three of these commands use rhosts style authentication. This package contains the clients needed for all of these services.  
The rsh package should be installed to enable remote access to other machines.

- » No added dependencies
- » No removed dependencies

### **ruby-1.8.5-5.el5 - ruby-1.8.5-5.el5\_2.6**

- » Group: **Development/Languages**

- » Summary: **An interpreter of object-oriented scripting language**
- » Description:

Ruby is the interpreted scripting language for quick and easy object-oriented programming. It has many features to process text files and to do system management tasks (as in Perl). It is simple, straight-forward, and extensible.

- » No added dependencies
- » No removed dependencies

#### **s390utils-1.5.3-10.el5.14 - s390utils-1.5.3-21.el5**

- » Group: **System Environment/Base**
- » Summary: **Linux/390 specific utilities.**
- » Description:

This package contains utilities related to Linux for S/390. The most important programs contained in this package are:

- The cmstools suite to list, check, copy and cat files from a CMS volume.
- chccwdev, a script to generically change attributes of a ccw device.
- dasdfmt, which is used to low-level format eckd-dasds with either the classic linux disk layout or the new z/OS compatible disk layout.
- dasdview, which displays DASD and VTOC information and dumps the content of a DASD to the console.
- fdasd, which is used to create or modify partitions on eckd-dasds formatted with the z/OS compatible disk layout.
- osasnmppd, a subagent for net-snmp to access the OSA hardware.
- qetharp to query and purge address data in the OSA and HiperSockets hardware
- qethconf to configure IBM QETH function IPA, VIPA and Proxy ARP.
- src\_vipa.sh to start applications using VIPA capabilities
- tunedasd, a tool to adjust tunable parameters on DASD devices
- vmconvert, a tool to convert vm dumps to lkcd compatible dumps.
- vmcp, a tool to send CP commands from a Linux guest to the VM.
- ziplt, which is used to make either dasds or tapes bootable for system IPL or system dump.
- zdump, which is used to retrieve system dumps from either tapes or dasds.

- » No added dependencies
- » No removed dependencies

#### **sabayon-2.12.4-5.el5 - sabayon-2.12.4-6.el5**

- » Group: **Applications/System**
- » Summary: **Tool to maintain user profiles in a GNOME desktop**
- » Description:

Sabayon is a tool to help sysadmins and user change and maintain the default behaviour of the GNOME desktop. This package contains the graphical tools which a sysadmin use to manage Sabayon profiles.

- » No added dependencies
- » No removed dependencies

#### salinfo-1.1-3.el5 - salinfo-1.1-4.el5

- » Group: **Utilities/System**
- » Summary: **Sal info tool.**
- » Description:

The IA64 Linux kernel has a Software Abstraction Layer (SAL). One of SAL's tasks is to record machine problems such as CMC (correctable machine checks), CPE (correctable platform errors), MCA (machine check architecture) and INIT (cpu initialized after boot). These records are provided by SAL to user space. salinfo saves and decodes CMC/CPE/MCA and INIT records.

- » No added dependencies
- » No removed dependencies

#### samba-3.0.25b-0.el5.4 - samba-3.0.33-3.7.el5

- » Group: **System Environment/Daemons**
- » Summary: **The Samba SMB server.**
- » Description:

Samba is the suite of programs by which a lot of PC-related machines share files, printers, and other information (such as lists of available files and printers). The Windows NT, OS/2, and Linux operating systems support this natively, and add-on packages can enable the same thing for DOS, Windows, VMS, UNIX of all kinds, MVS, and more. This package provides an SMB server that can be used to provide network services to SMB (sometimes called "Lan Manager") clients. Samba uses NetBIOS over TCP/IP (NetBT) protocols and does NOT need the NetBEUI (Microsoft Raw NetBIOS frame) protocol.

- » No added dependencies
- » No removed dependencies

#### sblim-1-29.EL5 - sblim-1-31.el5\_2.1

- » Group: **Applications/System**
- » Summary: **Standards Based Linux Instrumentation for Manageability**
- » Description:

SBLIM stands for Standards Based Linux Instrumentation for Manageability, and consists of a set of standards based Web Based Enterprise Management (WBEM) modules that use the Common Information Model (CIM) standard to gather and provide systems management information, events, and methods to local or networked consumers via an CIM object services broker using the CMPI (Common Manageability Programming Interface) standard. This package provides a set of core providers and development tools for systems management applications.

- » Added Dependencies:
  - sed
- » No removed dependencies

#### **scim-1.4.4-39.el5 - scim-1.4.4-41.el5**

- » Group: **System Environment/Libraries**
- » Summary: **Smart Common Input Method platform**
- » Description:

SCIM is a user friendly and full featured input method user interface and also a development platform to make life easier for Input Method developers.

- » No added dependencies
- » No removed dependencies

#### **scim-anthy-1.2.0-5.el5 - scim-anthy-1.2.0-6.el5**

- » Group: **System Environment/Libraries**
- » Summary: **SCIM IMEngine for anthy for Japanese input**
- » Description:

Scim-anthy is a SCIM IMEngine module for anthy to support Japanese input.

- » No added dependencies
- » No removed dependencies

#### **scim-bridge-0.4.5-7.el5 - scim-bridge-0.4.5-8.el5**

- » Group: **System Environment/Libraries**
- » Summary: **SCIM Bridge Gtk IM module**
- » Description:

SCIM Bridge is a C implementation of a Gtk IM module for SCIM.

- » No added dependencies
- » No removed dependencies

#### **scim-chewing-0.3.1-10.el5 - scim-chewing-0.3.1-11.el5**

- Group: **System Environment/Libraries**
- Summary: **Chewing Chinese input method for SCIM**
- Description:

This package provides Chewing Chinese input method for SCIM.

- No added dependencies
- No removed dependencies

#### **scim-pinyin-0.5.91-15.el5 - scim-pinyin-0.5.91-16.el5**

- Group: **System Environment/Libraries**
- Summary: **Smart Pinyin IMEngine for Smart Common Input Method platform**
- Description:

Simplified Chinese Smart Pinyin IMEngine for SCIM.

- No added dependencies
- No removed dependencies

#### **scsi-target-utils-0.0-0.20070620snap.el5 - scsi-target-utils-0.0-5.20080917snap.el5**

- Group: **System Environment/Daemons**
- Summary: **The SCSI target daemon and utility programs**
- Description:

The SCSI target package contains the daemon and tools to setup a SCSI targets.  
Currently, software iSCSI targets are supported.

- Added Dependencies:
  - libibverbs-devel
  - librdmacm-devel
- No removed dependencies

#### **selinux-policy-2.4.6-104.el5 - selinux-policy-2.4.6-203.el5**

- Group: **System Environment/Base**
- Summary: **SELinux policy configuration**
- Description:

SELinux Reference Policy - modular.

- No added dependencies
- No removed dependencies

#### **setroubleshoot-1.8.11-4.el5 - setroubleshoot-2.0.5-3.el5**

- Group: **Applications/System**
- Summary: **Helps troubleshoot SELinux problems**
- Description:

setroubleshoot gui. Application that allows you to view setroubleshoot-server messages.

Provides tools to help diagnose SELinux problems. When AVC messages are generated an alert can be generated that will give information about the problem and help track its resolution. Alerts can be configured to user preference. The same tools can be run on existing log files.

- Added Dependencies:
  - desktop-file-utils
  - htmlview
- No removed dependencies

#### **setup-2.5.58-1.el5 - setup-2.5.58-4.el5**

- Group: **System Environment/Base**
- Summary: **A set of system configuration and setup files.**
- Description:

The setup package contains a set of important system configuration and setup files, such as passwd, group, and profile.

- No added dependencies
- No removed dependencies

#### **sg3\_utils-1.20-2.1 - sg3\_utils-1.25-1.el5**

- Group: **Utilities/System**
- Summary: **Utils for Linux's SCSI generic driver devices + raw devices**
- Description:

Collection of Linux utilities for devices that use the SCSI command set. Includes utilities to copy data based on "dd" syntax and semantics (called `sg_dd`, `sgp_dd` and `sgm_dd`); check INQUIRY data and VPD pages (`sg_inq`); check mode and log pages (`sginfo`, `sg_modes` and `sg_logs`); spin up and down disks (`sg_start`); do self tests (`sg_senddiag`); and various other functions. See the README, CHANGELOG and COVERAGE files. Requires the linux kernel 2.4 series or later. In the 2.4 series SCSI generic device names (e.g. `/dev/sg0`) must be used. In the 2.6 series other device names may be used as well (e.g. `/dev/sda`).

Warning: Some of these tools access the internals of your system and the incorrect usage of them may render your system inoperable.

- » No added dependencies
- » No removed dependencies

#### shadow-utils-4.0.17-12.el5 - shadow-utils-4.0.17-14.el5

- » Group: **System Environment/Base**
- » Summary: **Utilities for managing accounts and shadow password files.**
- » Description:

The shadow-utils package includes the necessary programs for converting UNIX password files to the shadow password format, plus programs for managing user and group accounts. The `pwconv` command converts passwords to the shadow password format. The `pwunconv` command unconverts shadow passwords and generates an `npasswd` file (a standard UNIX password file). The `pwck` command checks the integrity of password and shadow files. The `lastlog` command prints out the last login times for all users. The `useradd`, `userdel`, and `usermod` commands are used for managing user accounts. The `groupadd`, `groupdel`, and `groupmod` commands are used for managing group accounts.

- » No added dependencies
- » No removed dependencies

#### shared-mime-info-0.19-3.el5 - shared-mime-info-0.19-5.el5

- » Group: **System Environment/Libraries**
- » Summary: **Shared MIME information database**
- » Description:

This is the freedesktop.org shared MIME info database.

Many programs and desktops use the MIME system to represent the types of files. Frequently, it is necessary to work out the correct MIME type for a file. This is generally done by examining the file's name or contents, and looking up the correct MIME type in a database.



- » No added dependencies
- » No removed dependencies

**smartmontools-5.36-3.1.el5 - smartmontools-5.38-2.el5**

- » Group: **System Environment/Base**
- » Summary: **Tools for monitoring SMART capable hard disks**
- » Description:

The smartmontools package contains two utility programs (smartctl and smartd) to control and monitor storage systems using the Self-Monitoring, Analysis and Reporting Technology System (SMART) built into most modern ATA and SCSI hard disks. In many cases, these utilities will provide advanced warning of disk degradation and failure.

- » Added Dependencies:
  - libselinux-devel
- » No removed dependencies

**sos-1.7-9.1.el5 - sos-1.7-9.16.el5**

- » Group: **Development/Libraries**
- » Summary: **A set of tools to gather troubleshooting information from a system**
- » Description:

Sos is a set of tools that gathers information about system hardware and configuration. The information can then be used for diagnostic purposes and debugging. Sos is commonly used to help support technicians and developers.

- » No added dependencies
- » No removed dependencies

**spamassassin-3.1.9-1.el5 - spamassassin-3.2.5-1.el5**

- » Group: **Applications/Internet**
- » Summary: **Spam filter for email which can be invoked from mail delivery agents.**
- » Description:

SpamAssassin provides you with a way to reduce if not completely eliminate Unsolicited Commercial Email (SPAM) from your incoming email. It can be invoked by a MDA such as sendmail or postfix, or can be called from a procmail script, .forward file, etc. It uses a genetic-algorithm evolved scoring system to identify messages which look spammy, then adds headers to the message so they can be filtered by the user's mail reading software. This distribution includes the spamd/spamc components which create a server that considerably speeds processing of mail.

To enable spamassassin, if you are receiving mail locally, simply add this line to your ~/.procmailrc:

```
INCLUDERC=/etc/mail/spamassassin/spamassassin-default.rc
```

To filter spam for all users, add that line to /etc/procmailrc (creating if necessary).

- » Added Dependencies:
  - perl-HTML-Parser >= 3.43
- » No removed dependencies

#### **speex-1.0.5-4 - speex-1.0.5-4.el5\_1.1**

- » Group: **System Environment/Libraries**
- » Summary: **A voice compression format (codec)**
- » Description:

Speex is a patent-free compression format designed especially for speech. It is specialized for voice communications at low bit-rates in the 2-45 kbps range. Possible applications include Voice over IP (VoIP), Internet audio streaming, audio books, and archiving of speech data (e.g. voice mail).

- » No added dependencies
- » No removed dependencies

#### **squid-2.6.STABLE6-4.el5 - squid-2.6.STABLE21-3.el5**

- » Group: **System Environment/Daemons**
- » Summary: **The Squid proxy caching server.**
- » Description:

Squid is a high-performance proxy caching server for Web clients, supporting FTP, gopher, and HTTP data objects. Unlike traditional caching software, Squid handles all requests in a single, non-blocking, I/O-driven process. Squid keeps meta data and especially hot objects cached in RAM, caches DNS lookups, supports non-blocking DNS lookups, and implements negative caching of failed requests.

Squid consists of a main server program squid, a Domain Name System lookup program (dnsserver), a program for retrieving FTP data (ftpget), and some management and client tools.

- » No added dependencies

- » No removed dependencies

#### **strace-4.5.16-1.el5.1 - strace-4.5.18-2.el5**

- » Group: **Development/Debuggers**
- » Summary: **Tracks and displays system calls associated with a running process**
- » Description:

The strace program intercepts and records the system calls called and received by a running process. Strace can print a record of each system call, its arguments and its return value. Strace is useful for diagnosing problems and debugging, as well as for instructional purposes.

Install strace if you need a tool to track the system calls made and received by a process.

- » Added Dependencies:
  - libacl-devel
  - libaio-devel
- » No removed dependencies

#### **stunnel-4.15-2 - stunnel-4.15-2.el5.1**

- » Group: **Applications/Internet**
- » Summary: **An SSL-encrypting socket wrapper.**
- » Description:

Stunnel is a socket wrapper which can provide SSL (Secure Sockets Layer) support to ordinary applications. For example, it can be used in conjunction with imapd to create an SSL secure IMAP server.

- » No added dependencies
- » No removed dependencies

#### **subversion-1.4.2-2.el5 - subversion-1.4.2-4.el5**

- » Group: **Development/Tools**
- » Summary: **Modern Version Control System designed to replace CVS**
- » Description:

Subversion is a concurrent version control system which enables one or more users to collaborate in developing and maintaining a hierarchy of files and directories while keeping a history of all changes. Subversion only stores the differences between versions, instead of every complete file. Subversion is intended to be a compelling replacement for CVS.

- » Added Dependencies:
  - neon-devel >= 0:0.25.5-6.el5

- Removed Dependencies:
  - neon-devel >= 0:0.24.7-1

### **sudo-1.6.8p12-10 - sudo-1.6.9p17-3.el5**

- Group: **Applications/System**
- Summary: **Allows restricted root access for specified users.**
- Description:

Sudo (superuser do) allows a system administrator to give certain users (or groups of users) the ability to run some (or all) commands as root while logging all commands and arguments. Sudo operates on a per-command basis. It is not a replacement for the shell. Features include: the ability to restrict what commands a user may run on a per-host basis, copious logging of each command (providing a clear audit trail of who did what), a configurable timeout of the sudo command, and the ability to use the same configuration file (sudoers) on many different machines.

- Added Dependencies:
  - audit-libs-devel
  - autoconf
  - automake
  - libcap-devel
  - libtool
- No removed dependencies

### **syslogd-1.4.1-40.el5 - syslogd-1.4.1-44.el5**

- Group: **System Environment/Daemons**
- Summary: **System logging and kernel message trapping daemons.**
- Description:

The syslogd package contains two system utilities (syslogd and klogd) which provide support for system logging. Syslogd and klogd run as daemons (background processes) and log system messages to different places, like sendmail logs, security logs, error logs, etc.

- No added dependencies
- No removed dependencies

### **sysstat-7.0.0-3.el5 - sysstat-7.0.2-3.el5**

- Group: **Applications/System**
- Summary: **The sar and iostat system monitoring commands.**
- Description:

This package provides the sar and iostat commands for Linux. Sar and iostat enable system monitoring of disk, network, and other IO activity.

- » No added dependencies
- » No removed dependencies

### **system-config-bind-4.0.3-2.el5 - system-config-bind-4.0.3-4.el5**

- » Group: **Applications/System**
- » Summary: **The Red Hat BIND DNS Configuration Tool.**
- » Description:

The system-config-bind package provides a graphical user interface (GUI) to configure the Berkeley Internet Name Domain (BIND) Domain Name System (DNS) server, "named", with a set of python modules. Users new to BIND configuration can use this tool to quickly set up a working DNS server.

- » No added dependencies
- » No removed dependencies

### **system-config-cluster-1.0.50-1.3 - system-config-cluster-1.0.55-1.0**

- » Group: **Applications/System**
- » Summary: **system-config-cluster is a utility which allows you to manage cluster configuration in a graphical setting.**
- » Description:

system-config-cluster is a utility which allows you to manage cluster configuration in a graphical setting.

- » No added dependencies
- » No removed dependencies

### **system-config-date-1.8.12-1.el5 - system-config-date-1.8.12-3.el5**

- » Group: **System Environment/Base**
- » Summary: **A graphical interface for modifying system date and time**
- » Description:

system-config-date is a graphical interface for changing the system date and time, configuring the system time zone, and setting up the NTP daemon to synchronize the time of the system with an NTP time server.

- » No added dependencies
- » No removed dependencies

### **system-config-httpd-1.3.3.1-1.el5 - system-config-httpd-1.3.3.3-1.el5**

- Group: **Applications/System**
- Summary: **Apache configuration tool**
- Description:

A RHN configuration tool for apache.

- Added Dependencies:
  - gettext
- No removed dependencies

#### **system-config-kdump-1.0.12-1.el5 - system-config-kdump-1.0.14-4.el5**

- Group: **System Environment/Base**
- Summary: **A graphical interface for configuring kernel crash dumping**
- Description:

system-config-kdump is a graphical tool for configuring kernel crash dumping via kdump and kexec.

- No added dependencies
- No removed dependencies

#### **system-config-kickstart-2.6.19.1-1.el5 - system-config-kickstart-2.6.19.8-2.el5**

- Group: **System Environment/Base**
- Summary: **A graphical interface for making kickstart files.**
- Description:

Kickstart Configurator is a graphical tool for creating kickstart files.

- No added dependencies
- No removed dependencies

#### **system-config-language-1.1.18-1.el5 - system-config-language-1.1.18-2.el5**

- Group: **System Environment/Base**
- Summary: **A graphical interface for modifying the system language**
- Description:

system-config-language is a graphical user interface that allows the user to change the default language of the system.

- No added dependencies
- No removed dependencies

#### **system-config-lvm-1.0.22-1.0.el5 - system-config-lvm-1.1.5-1.0.el5**

- Group: **Applications/System**
- Summary: **A utility for graphically configuring Logical Volumes**

## » Description:

system-config-lvm is a utility for graphically configuring Logical Volumes

## » Added Dependencies:

- intltool

## » No removed dependencies

**system-config-network-1.3.99-2.el5 - system-config-network-1.3.99.12-1.el5**» Group: **Applications/System**» Summary: **The GUI of the NEtwork Adminstration Tool**

## » Description:

This is the GUI of the network configuration tool, supporting Ethernet, Wireless, TokenRing, ADSL, ISDN and PPP.

## » No added dependencies

## » No removed dependencies

**system-config-printer-0.7.32.5-1.el5 - system-config-printer-0.7.32.10-1.el5**» Group: **System Environment/Base**» Summary: **A printer administration tool**

## » Description:

system-config-printer is a graphical user interface that allows the user to configure a CUPS print server.

## » No added dependencies

## » No removed dependencies

**system-config-samba-1.2.39-1.el5 - system-config-samba-1.2.41-3.el5**» Group: **System Environment/Base**» Summary: **Samba server configuration tool**

## » Description:

system-config-samba is a graphical user interface for creating, modifying, and deleting samba shares.

## » No added dependencies

## » No removed dependencies

**system-config-securitylevel-1.6.29.1-1.el5 - system-config-securitylevel-1.6.29.1-2.1.el5**» Group: **System Environment/Base**» Summary: **A graphical interface for modifying the system security**

**level**

## » Description:

system-config-securitylevel is a graphical user interface for setting basic firewall rules.

- » No added dependencies
- » No removed dependencies

**system-config-users-1.2.51-1.el5 - system-config-users-1.2.51-4.el5**» Group: **Applications/System**» Summary: **A graphical interface for administering users and groups**

## » Description:

system-config-users is a graphical utility for administrating users and groups. It depends on the libuser library.

- » No added dependencies
- » No removed dependencies

**systemtap-0.5.14-1.el5 - systemtap-0.7.2-2.el5**» Group: **Development/System**» Summary: **Instrumentation System**

## » Description:

SystemTap is an instrumentation system for systems running Linux 2.6. Developers can write instrumentation to collect data on the operation of the system.

## » Added Dependencies:

- /usr/bin/dvips
- /usr/bin/latex
- /usr/bin/ps2pdf
- crash-devel
- elfutils-devel >= 0.127
- latex2html
- zlib-devel

## » Removed Dependencies:

- dejagnu
- glib2-devel >= 2.0.0

**tcp\_wrappers-7.6-40.4.el5 - tcp\_wrappers-7.6-40.6.el5**» Group: **System Environment/Daemons**» Summary: **A security tool which acts as a wrapper for TCP daemons.**

## » Description:



The `tcp_wrappers` package provides small daemon programs which can monitor and filter incoming requests for `systat`, `finger`, `FTP`, `telnet`, `rlogin`, `rsh`, `exec`, `tftp`, `talk` and other network services.

Install the `tcp_wrappers` program if you need a security tool for filtering incoming network services requests.

This version also supports IPv6.

- » No added dependencies
- » No removed dependencies

#### **tcpdump-3.9.4-11.el5 - tcpdump-3.9.4-14.el5**

- » Group: **Applications/Internet**
- » Summary: **A network traffic monitoring tool.**
- » Description:

Tcpdump is a command-line tool for monitoring network traffic. Tcpdump can capture and display the packet headers on a particular network interface or on all interfaces. Tcpdump can display all of the packet headers, or just the ones that match particular criteria.

Install tcpdump if you need a program to monitor network traffic.

- » Added Dependencies:
  - `/usr/sbin/sendmail`
- » No removed dependencies

#### **tcsh-6.14-12.el5 - tcsh-6.14-14.el5**

- » Group: **System Environment/Shells**
- » Summary: **An enhanced version of csh, the C shell.**
- » Description:

Tcsh is an enhanced but completely compatible version of `csh`, the C shell. Tcsh is a command language interpreter which can be used both as an interactive login shell and as a shell script command processor. Tcsh includes a command line editor, programmable word completion, spelling correction, a history mechanism, job control and a C language like syntax.

- » No added dependencies
- » No removed dependencies

#### **telnet-0.17-38.el5 - telnet-0.17-39.el5**

- » Group: **Applications/Internet**
- » Summary: **The client program for the telnet remote login protocol.**
- » Description:

Telnet is a popular protocol for logging into remote systems over the Internet. The telnet package provides a command line telnet client.

- No added dependencies
- No removed dependencies

#### **tetex-3.0-33.1.el5 - tetex-3.0-33.2.el5\_1.2**

- Group: **Applications/Publishing**
- Summary: **The TeX text formatting system.**
- Description:

TeX is an implementation of TeX for Linux or UNIX systems. TeX takes a text file and a set of formatting commands as input and creates a typesetter-independent .dvi (DeVice Independent) file as output. Usually, TeX is used in conjunction with a higher level formatting package like LaTeX or PlainTeX, since TeX by itself is not very user-friendly. The output format needn't to be DVI, but also PDF, when using pdflatex or similar tools.

Install tetex if you want to use the TeX text formatting system. Consider to install tetex-latex (a higher level formatting package which provides an easier-to-use interface for TeX). Unless you are an expert at using TeX, you should also install the tetex-doc package, which includes the documentation for TeX.

- No added dependencies
- No removed dependencies

#### **tk-8.4.13-3.fc6 - tk-8.4.13-5.el5\_1.1**

- Group: **Development/Languages**
- Summary: **Tk graphical toolkit for the Tcl scripting language**
- Description:

When paired with the Tcl scripting language, Tk provides a fast and powerful way to create cross-platform GUI applications.

- No added dependencies
- No removed dependencies

#### **tmpwatch-2.9.7-1.1.el5.1 - tmpwatch-2.9.7-1.1.el5.2**

- Group: **System Environment/Base**
- Summary: **A utility for removing files based on when they were last accessed.**
- Description:

The `tmpwatch` utility recursively searches through specified directories and removes files which have not been accessed in a specified period of time. `Tmpwatch` is normally used to clean up directories which are used for temporarily holding files (for example, `/tmp`). `Tmpwatch` ignores symlinks, won't switch filesystems and only removes empty directories and regular files.

- » No added dependencies
- » No removed dependencies

#### **tog-pegasus-2.6.1-2.el5 - tog-pegasus-2.7.1-2.el5**

- » Group: **Systems Management/Base**
- » Summary: **OpenPegasus WBEM Services for Linux**
- » Description:

OpenPegasus WBEM Services for Linux enables management solutions that deliver increased control of enterprise resources. WBEM is a platform and resource independent DMTF standard that defines a common information model and communication protocol for monitoring and controlling resources from diverse sources.

- » Added Dependencies:
  - `net-snmp-devel`
- » No removed dependencies

#### **tomcat5-5.5.23-0jpp.3.0.2.el5 - tomcat5-5.5.23-0jpp.7.el5\_2.1**

- » Group: **Networking/Daemons**
- » Summary: **Apache Servlet/JSP Engine, RI for Servlet 2.4/JSP 2.0 API**
- » Description:

Tomcat is the servlet container that is used in the official Reference Implementation for the Java Servlet and JavaServer Pages technologies. The Java Servlet and JavaServer Pages specifications are developed by Sun under the Java Community Process.

Tomcat is developed in an open and participatory environment and released under the Apache Software License. Tomcat is intended to be a collaboration of the best-of-breed developers from around the world. We invite you to participate in this open development project. To learn more about getting involved, [click here](#).

- » No added dependencies
- » No removed dependencies

#### **totem-2.16.7-1.el5 - totem-2.16.7-4.el5**

- » Group: **Applications/Multimedia**

» Summary: **Movie player for GNOME 2**

» Description:

Totem is simple movie player for the Gnome desktop. It features a simple playlist, a full-screen mode, seek and volume controls, as well as a pretty complete keyboard navigation.

» Added Dependencies:

- gecko-devel-unstable >= 1.9

» Removed Dependencies:

- firefox-devel

### **traceroute-2.0.1-2.el5 - traceroute-2.0.1-5.el5**

» Group: **Applications/Internet**

» Summary: **Traces the route taken by packets over an IPv4/IPv6 network**

» Description:

The traceroute utility displays the route used by IP packets on their way to a specified network (or Internet) host. Traceroute displays the IP number and host name (if possible) of the machines along the route taken by the packets. Traceroute is used as a network debugging tool. If you're having network connectivity problems, traceroute will show you where the trouble is coming from along the route.

Install traceroute if you need a tool for diagnosing network connectivity problems.

» No added dependencies

» No removed dependencies

### **tzdata-2007d-1.el5 - tzdata-2008i-1.el5**

» Group: **System Environment/Base**

» Summary: **Timezone data**

» Description:

This package contains data files with rules for various timezones around the world.

» No added dependencies

» No removed dependencies

### **udev-095-14.9.el5 - udev-095-14.19.el5**

» Group: **System Environment/Base**

» Summary: **A userspace implementation of devfs**

» Description:

The udev package contains an implementation of devfs in userspace using sysfs and netlink.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **unzip-5.52-2.2.1 - unzip-5.52-3.el5**

- ▶ Group: **Applications/Archiving**
- ▶ Summary: **A utility for unpacking zip files.**
- ▶ Description:

The unzip utility is used to list, test, or extract files from a zip archive. Zip archives are commonly found on MS-DOS systems. The zip utility, included in the zip package, creates zip archives. Zip and unzip are both compatible with archives created by PKWARE(R)'s PKZIP for MS-DOS, but the programs' options and default behaviors do differ in some respects.

Install the unzip package if you need to list, test or extract files from a zip archive.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **usermode-1.88-3.el5 - usermode-1.88-3.el5.2**

- ▶ Group: **Applications/System**
- ▶ Summary: **Tools for certain user account management tasks.**
- ▶ Description:

The usermode package contains the userhelper program, which can be used to allow configured programs to be run with superuser privileges by ordinary users.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **util-linux-2.13-0.45.el5 - util-linux-2.13-0.50.el5**

- ▶ Group: **System Environment/Base**
- ▶ Summary: **A collection of basic system utilities.**
- ▶ Description:

The util-linux package contains a large variety of low-level system utilities that are necessary for a Linux system to function. Among others, Util-linux contains the fdisk configuration tool and the login program.

- ▶ No added dependencies

- » No removed dependencies

### **vim-7.0.109-3.el5.3 - vim-7.0.109-4.el5\_2.4z**

- » Group: **Applications/Editors**
- » Summary: **The VIM editor.**
- » Description:

VIM (VIsual editor iMproved) is an updated and improved version of the vi editor. Vi was the first real screen-based editor for UNIX, and is still very popular. VIM improves on vi by adding new features: multiple windows, multi-level undo, block highlighting and more.

- » No added dependencies
- » No removed dependencies

### **virt-manager-0.4.0-3.el5 - virt-manager-0.5.3-10.el5**

- » Group: **Applications/Emulators**
- » Summary: **Virtual Machine Manager**
- » Description:

Virtual Machine Manager provides a graphical tool for administering virtual machines such as Xen. It uses libvirt as the backend management API.

- » No added dependencies
- » No removed dependencies

### **vixie-cron-4.1-72.el5 - vixie-cron-4.1-76.el5**

- » Group: **System Environment/Base**
- » Summary: **The Vixie cron daemon for executing specified programs at set times.**
- » Description:

The vixie-cron package contains the Vixie version of cron. Cron is a standard UNIX daemon that runs specified programs at scheduled times. Vixie cron adds better security and more powerful configuration options to the standard version of cron.

- » No added dependencies
- » No removed dependencies

### **vnc-4.1.2-9.el5 - vnc-4.1.2-14.el5**

- » Group: **User Interface/Desktops**
- » Summary: **A remote display system.**
- » Description:

Virtual Network Computing (VNC) is a remote display system which allows you to view a computing 'desktop' environment not only on the machine where it is running, but from anywhere on the Internet and from a wide variety of machine architectures. This package contains a client which will allow you to connect to other desktops running a VNC server.

- ▶ Added Dependencies:
  - libselinux-devel
  - mesa-source
- ▶ Removed Dependencies:
  - libdrm-devel

#### **vsftpd-2.0.5-10.el5 - vsftpd-2.0.5-12.el5**

- ▶ Group: **System Environment/Daemons**
- ▶ Summary: **vsftpd - Very Secure Ftp Daemon**
- ▶ Description:

vsftpd is a Very Secure FTP daemon. It was written completely from scratch.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **wireshark-0.99.6-1.el5 - wireshark-1.0.3-4.el5\_2**

- ▶ Group: **Applications/Internet**
- ▶ Summary: **Network traffic analyzer**
- ▶ Description:

Wireshark is a network traffic analyzer for Unix-ish operating systems.

This package lays base for libpcap, a packet capture and filtering library, contains command-line utilities, contains plugins and documentation for wireshark. A graphical user interface is packaged separately to GTK+ package.

- ▶ Added Dependencies:
  - bison
  - flex
  - libsmi-devel
- ▶ Removed Dependencies:
  - net-snmp-devel >= 5.3
  - net-snmp-utils >= 5.3

#### **words-3.0-9 - words-3.0-9.1**

- ▶ Group: **System Environment/Libraries**

- Summary: **A dictionary of English words for the /usr/share/dict directory.**
- Description:

The words file is a dictionary of English words for the /usr/share/dict directory. Some programs use this database of words to check spelling. Password checkers use it to look for bad passwords.

- No added dependencies
- No removed dependencies

#### **wpa\_supplicant-0.4.8-10.1.fc6 - wpa\_supplicant-0.5.10-8.el5**

- Group: **System Environment/Base**
- Summary: **WPA/WPA2/IEEE 802.1X Supplicant**
- Description:

wpa\_supplicant is a WPA Supplicant for Linux, BSD and Windows with support for WPA and WPA2 (IEEE 802.11i / RSN). Supplicant is the IEEE 802.1X/WPA component that is used in the client stations. It implements key negotiation with a WPA Authenticator and it controls the roaming and IEEE 802.11 authentication/association of the wlan driver.

- Added Dependencies:
  - dbus-devel
- No removed dependencies

#### **x3270-3.3.4p7-3.el5.1 - x3270-3.3.4p7-3.el5.4**

- Group: **Applications/Internet**
- Summary: **An X Window System based IBM 3278/3279 terminal emulator**
- Description:

The x3270 package contains files needed for emulating the IBM 3278/3279 terminals, commonly used with mainframe applications.

You will also need to install a frontend for x3270. Available frontends are x3270-x11 (for the X Window System) and x3270-text (for text mode).

- Added Dependencies:
  - /usr/bin/makeconv
  - libicu-devel
- No removed dependencies

#### **xen-3.0.3-41.el5 - xen-3.0.3-80.el5**

- Group: **Development/Libraries**
- Summary: **Xen is a virtual machine monitor**



► **Description:**

This package contains the Xen tools and management daemons needed to run virtual machines on x86, x86\_64, and ia64 systems. Information on how to use Xen can be found at the Xen project pages.

The Xen system also requires the Xen hypervisor and domain-0 kernel, which can be found in the kernel-xen\* package.

Virtualization can be used to run multiple operating systems on one physical system, for purposes of hardware consolidation, hardware abstraction, or to test untrusted applications in a sandboxed environment.

- No added dependencies
- No removed dependencies

### **xfig-3.2.4-21.2.el5 - xfig-3.2.4-21.3.el5**

- **Group: Applications/Multimedia**
- **Summary: An X Window System tool for drawing basic vector graphics.**
- **Description:**

Xfig is an X Window System tool for creating basic vector graphics, including bezier curves, lines, rulers and more. The resulting graphics can be saved, printed on PostScript printers or converted to a variety of other formats (e.g., X11 bitmaps, Encapsulated PostScript, LaTeX).

You should install xfig if you need a simple program to create vector graphics.

- No added dependencies
- No removed dependencies

### **xorg-x11-drv-ati-6.6.3-3.2.el5 - xorg-x11-drv-ati-6.6.3-3.22.el5**

- **Group: User Interface/X Hardware Support**
- **Summary: Xorg X11 ati video driver**
- **Description:**

X.Org X11 ati video driver.

- **Added Dependencies:**
  - autoconf
  - automake
  - libtool
  - xorg-x11-server-randr-source >= 1.1.1-48.52.el5
- No removed dependencies

### **xorg-x11-drv-i810-1.6.5-9.6.el5 - xorg-x11-drv-i810-1.6.5-9.21.el5**

- Group: **User Interface/X Hardware Support**
- Summary: **Xorg X11 i810 video driver(s)**
- Description:

X.Org X11 i810 video driver.

- Added Dependencies:
  - xorg-x11-server-randr-source >= 1.1.1-48.46.el5
- No removed dependencies

#### **xorg-x11-drv-keyboard-1.1.0-2.1 - xorg-x11-drv-keyboard-1.1.0-3**

- Group: **User Interface/X Hardware Support**
- Summary: **Xorg X11 keyboard input driver**
- Description:

X.Org X11 keyboard input driver.

- No added dependencies
- No removed dependencies

#### **xorg-x11-drv-mga-1.4.2-6.el5 - xorg-x11-drv-mga-1.4.2-10.el5**

- Group: **User Interface/X Hardware Support**
- Summary: **Xorg X11 mga video driver**
- Description:

X.Org X11 mga video driver.

- No added dependencies
- No removed dependencies

#### **xorg-x11-drv-mutouch-1.1.0-2 - xorg-x11-drv-mutouch-1.1.0-3**

- Group: **User Interface/X Hardware Support**
- Summary: **Xorg X11 mutouch input driver**
- Description:

X.Org X11 mutouch input driver.

- No added dependencies
- No removed dependencies

#### **xorg-x11-drv-nv-2.1.2-1.el5 - xorg-x11-drv-nv-2.1.12-3.el5**

- Group: **User Interface/X Hardware Support**
- Summary: **Xorg X11 nv video driver**
- Description:

X.Org X11 nv video driver.

- ▶ Added Dependencies:
  - xorg-x11-server-randr-source >= 1.1.1-48.46.el5
- ▶ No removed dependencies

#### **xorg-x11-drv-sis-0.9.1-7 - xorg-x11-drv-sis-0.9.1-7.1.el5**

- ▶ Group: **User Interface/X Hardware Support**
- ▶ Summary: **Xorg X11 sis video driver**
- ▶ Description:

X.Org X11 sis video driver.

- ▶ No added dependencies
- ▶ No removed dependencies

#### **xorg-x11-server-1.1.1-48.26.el5 - xorg-x11-server-1.1.1-48.52.el5**

- ▶ Group: **User Interface/X**
- ▶ Summary: **X.Org X11 X server**
- ▶ Description:

X.Org X11 X server

- ▶ No added dependencies
- ▶ No removed dependencies

#### **xorg-x11-xinit-1.0.2-13.el5 - xorg-x11-xinit-1.0.2-15.el5**

- ▶ Group: **User Interface/X**
- ▶ Summary: **X.Org X11 X Window System xinit startup scripts**
- ▶ Description:

X.Org X11 X Window System xinit startup scripts

- ▶ No added dependencies
- ▶ No removed dependencies

#### **xsane-0.991-4.el5 - xsane-0.991-5.el5**

- ▶ Group: **Applications/Multimedia**
- ▶ Summary: **An X Window System front-end for the SANE scanner interface.**
- ▶ Description:

XSane is an X based interface for the SANE (Scanner Access Now Easy) library, which provides access to scanners, digital cameras, and other capture devices. XSane is written in GTK+ and provides control for performing the scan and then manipulating the captured image.

- » No added dependencies
- » No removed dependencies

#### **xterm-215-5.el5 - xterm-215-8.el5**

- » Group: **User Interface/X**
- » Summary: **xterm terminal emulator for the X Window System**
- » Description:

The xterm program is a terminal emulator for the X Window System. It provides DEC VT102 and Tektronix 4014 compatible terminals for programs that can't use the window system directly.

- » No added dependencies
- » No removed dependencies

#### **yaboot-1.3.13-5.el5 - yaboot-1.3.13-7.el5**

- » Group: **System Environment/Base**
- » Summary: **Linux bootloader for Power Macintosh "New World" computers.**
- » Description:

yaboot is a bootloader for PowerPC machines which works on New World ROM machines (Rev. A iMac and newer) and runs directly from Open Firmware, eliminating the need for Mac OS. yaboot can also bootload IBM pSeries machines.

- » Added Dependencies:
  - e2fsprogs-devel
- » No removed dependencies

#### **yelp-2.16.0-15.el5 - yelp-2.16.0-22.el5**

- » Group: **Applications/System**
- » Summary: **A system documentation reader from the Gnome project**
- » Description:

Yelp is the Gnome 2 help/documentation browser. It is designed to help you browse all the documentation on your system in one central tool.

- » Added Dependencies:
  - gecko-devel-unstable >= 1.9
- » Removed Dependencies:

- gecko-devel >= 1.8.0.12

### **ypbind-1.19-8.el5 - ypbind-1.19-11.el5**

- **Group:** System Environment/Daemons
- **Summary:** The NIS daemon which binds NIS clients to an NIS domain.
- **Description:**

The Network Information Service (NIS) is a system that provides network information (login names, passwords, home directories, group information) to all of the machines on a network. NIS can allow users to log in on any machine on the network, as long as the machine has the NIS client programs running and the user's password is recorded in the NIS passwd database. NIS was formerly known as Sun Yellow Pages (YP).

This package provides the ypbind daemon. The ypbind daemon binds NIS clients to an NIS domain. Ypbind must be running on any machines running NIS client programs.

Install the ypbind package on any machines running NIS client programs (included in the yp-tools package). If you need an NIS server, you also need to install the ypserv package to a machine on your network.

- No added dependencies
- No removed dependencies

### **ypserv-2.19-3 - ypserv-2.19-5.el5**

- **Group:** System Environment/Daemons
- **Summary:** The NIS (Network Information Service) server.
- **Description:**

The Network Information Service (NIS) is a system that provides network information (login names, passwords, home directories, group information) to all of the machines on a network. NIS can allow users to log in on any machine on the network, as long as the machine has the NIS client programs running and the user's password is recorded in the NIS passwd database. NIS was formerly known as Sun Yellow Pages (YP).

This package provides the NIS server, which will need to be running on your network. NIS clients do not need to be running the server.

Install ypserv if you need an NIS server for your network. You also need to install the yp-tools and ypbind packages on any NIS client machines.

- No added dependencies
- No removed dependencies

### **yum-3.0.1-5.el5 - yum-3.2.19-18.el5**

- **Group:** System Environment/Base

» Summary: **RPM installer/updater**

» Description:

Yum is a utility that can check for and automatically download and install updated RPM packages. Dependencies are obtained and downloaded automatically prompting the user as necessary.

» Added Dependencies:

▪ intltool

» No removed dependencies

#### **yum-metadata-parser-1.0-8.fc6 - yum-metadata-parser-1.1.2-2.el5**

» Group: **Development/Libraries**

» Summary: **A fast metadata parser for yum**

» Description:

Fast metadata parser for yum implemented in C.

» No added dependencies

» No removed dependencies

#### **yum-rhn-plugin-0.5.2-3.el5 - yum-rhn-plugin-0.5.3-30.el5**

» Group: **System Environment/Base**

» Summary: **RHN support for yum**

» Description:

This yum plugin provides support for yum to access a Red Hat Network server for software updates.

» No added dependencies

» No removed dependencies

#### **yum-utils-1.0.4-3.el5 - yum-utils-1.1.16-13.el5**

» Group: **Development/Tools**

» Summary: **Utilities based around the yum package manager**

» Description:

- » No added dependencies
- » No removed dependencies

#### **zip-2.31-1.2.2 - zip-2.31-2.el5**

- » Group: **Applications/Archiving**
- » Summary: **A file compression and packaging utility compatible with PKZIP.**
- » Description:

The zip program is a compression and file packaging utility. Zip is analogous to a combination of the UNIX tar and compress commands and is compatible with PKZIP (a compression and file packaging utility for MS-DOS systems).

Install the zip package if you need to compress files using the zip program.

- » No added dependencies
- » No removed dependencies

## **13. Configuration Changes From Previous Release**

```

iscsi-initiator-utils-6.2.0.868-0.7.el5.i386.rpm: /etc/rc.d/init.d/iscsid
---
+++
@@ -59,9 +59,7 @@

    echo -n $"Stopping iSCSI daemon: "

- # iscsid does not have a nice shutdown process.
- # It really should never be stopped
- pkill -KILL iscsid
+ iscsiadm -k 0
    echo

    modprobe -r ib_iser 2>/dev/null
ypbind-1.19-8.el5.i386.rpm: /etc/rc.d/init.d/ypbind
---
+++
@@ -37,7 +37,7 @@
    [ -x /usr/sbin/selinuxenabled ] && /usr/sbin/selinuxenabled || return
    allow_ypbind=0
    . /etc/selinux/config
- if [ -e /etc/selinux/${SELINUXTYPE}/modules1/active/booleans.local ]; then
+ if [ -e /etc/selinux/${SELINUXTYPE}/modules/active/booleans.local ]; then
    . /etc/selinux/${SELINUXTYPE}/modules/active/booleans.local
    fi
    if [ $allow_ypbind == 0 ]; then
@@ -52,6 +52,7 @@
    if [ -n "$NISDOMAIN" ]; then
        action $"Setting NIS domain name $NISDOMAIN: " domainname $NISDOMAIN
    else
+ action $"Error: NIS domain name is not set." false
        exit 1
    fi
    fi
@@ -112,7 +113,7 @@
    fi
    fi
    echo
-     selinux_off
+     #selinux_off
    return $RETVAL
}

udev-095-14.16.el5.i386.rpm: /etc/sysconfig/modules/udev-stw.modules
---
+++
@@ -1,4 +1,6 @@
#!/bin/sh
-for i in nvram floppy parport lp snd-powermac;do
+MODULES="nvram floppy parport lp snd-powermac"
+[ -f /etc/sysconfig/udev-stw ] && . /etc/sysconfig/udev-stw
+for i in $MODULES ; do
        modprobe $i >/dev/null 2>&1
    done
dhcp-3.0.5-13.el5.i386.rpm: /etc/rc.d/init.d/dhcpd
---
+++
@@ -62,6 +62,11 @@
    [ -f $conf ] || return 6
    $dhcpd -q -t -cf $conf

```



```

    RETVAL=$?
+   if [ $RETVAL -eq 1 ]; then
+       $dhcpd -t -cf $conf
+   else
+       echo "Syntax: OK" >&2
+   fi
    return $RETVAL
}

initscripts-8.45.19.EL-1.i386.rpm: /etc/rc.d/init.d/netconsole
---
+++
@@ -92,7 +92,7 @@

SYSLOGOPTS="netconsole=$LOCALPORT@$LOCALADDR/$DEV,$SYSLOGPORT@$SYSLOGADDR/$SYSLOG
MACADDR "

- logger -p daemon.info -t netconsole: inserting netconsole module with arguments \
+ /usr/bin/logger -p daemon.info -t netconsole: inserting netconsole module with
arguments \
    $SYSLOGOPTS
    if [ -n "$SYSLOGOPTS" ]; then
        action $"Initializing netconsole" modprobe netconsole \
bind-9.3.4-6.P1.el5.i386.rpm: /etc/rc.d/init.d/named
---
+++
@@ -253,7 +253,7 @@
    fi
    [ "$RETVAL" -eq 0 ] && success $"$named reload" || failure $"$named reload"
    echo
- return $?
+ return $RETVAL
}
probe() {
    # named knows how to reload intelligently; we don't want linuxconf
initscripts-8.45.19.EL-1.i386.rpm: /etc/sysconfig/network-scripts/ifup-ipp
---
+++
@@ -30,20 +30,20 @@
    # check that ippd is available for syncppp
    if [ "$ENCAP" = "syncppp" ]; then
        if [ ! -x /usr/sbin/ippd -a ! -x /sbin/ippd ] ; then
-            logger -p daemon.info -t ifup-ipp "ippd does not exist or is not
executable"
+            /usr/bin/logger -p daemon.info -t ifup-ipp "ippd does not exist or is
not executable"
            exit 1
        fi
    fi

    # check that isdnctrl is available
    if [ ! -x /usr/sbin/isdnctrl -a ! -x /sbin/isdnctrl ] ; then
-        logger -p daemon.info -t ifup-ipp "isdnctrl does not exist or is not
executable"
+        /usr/bin/logger -p daemon.info -t ifup-ipp "isdnctrl does not exist or is
not executable"
        exit 1
    fi

```

```

# check all ISDN devices
if ! isdnctrl list all >/dev/null 2>&1 ; then
-   logger -p daemon.info -t ifup-ippd "cannot list ISDN devices"
+   /usr/bin/logger -p daemon.info -t ifup-ippd "cannot list ISDN devices"
    exit 1
fi

@@ -52,12 +52,12 @@

function log_echo()
{
-   logger -p daemon.info -t ifup-ippd "$$"
+   /usr/bin/logger -p daemon.info -t ifup-ippd "$$"
}

function log_isdnctrl()
{
-   logger -p daemon.info -t ifup-ippd isdnctrl $*
+   /usr/bin/logger -p daemon.info -t ifup-ippd isdnctrl $*
    isdnctrl $* >/dev/null 2>&1 || exit 1
}

@@ -338,12 +338,12 @@
    [ -n "$NETMASK" ] && netmask="netmask $NETMASK"

    # activate ISDN device
-   logger -p daemon.info -t ifup-ippd "ifconfig $DEVICE $IPADDR pointopoint
$GATEWAY $netmask up"
+   /usr/bin/logger -p daemon.info -t ifup-ippd "ifconfig $DEVICE $IPADDR
pointopoint $GATEWAY $netmask up"
    ifconfig $DEVICE $IPADDR pointopoint $GATEWAY $netmask up >/dev/null 2>&1

    if [ "$ENCAP" = "syncppp" ]; then
        # start ippd daemon
-       logger -p daemon.info -t ifup-ippd "ippd $options $netmask"
+       /usr/bin/logger -p daemon.info -t ifup-ippd "ippd $options $netmask"
        ippd $options $netmask >/dev/null 2>&1

        # start ibod daemon
lynx-2.8.5-28.1.i386.rpm: /etc/lynx.cfg
---
+++
@@ -1026,7 +1026,7 @@
# ====
# Do not define this.
#
-#TRUSTED_LYNXCGI:none
+TRUSTED_LYNXCGI:none

.h2 LYNXCGI_ENVIRONMENT
nfs-utils-1.0.9-33.el5.i386.rpm: /etc/rc.d/init.d/rpcgssd
---
+++
@@ -28,19 +28,23 @@
case "$1" in
    start|condstart)
        # Check that networking is up.
-       [ "$NETWORKING" = "no" ] && exit 6

```

```

+ [ "${NETWORKING}" != "yes" ] && exit 6
+ [ ! -x /usr/sbin/rpc.gssd ] && exit 5
-
- # List of kernel modules to load
- [ -z "${SECURE_NFS_MODS}" ] && SECURE_NFS_MODS="des rpcsec_gss_krb5"

# Make sure the daemon is not already running.
if status $prog > /dev/null ; then
    exit 0
fi
+
+ # During condstart need to check again to see
+ # if we are configured to start
+ [ "${SECURE_NFS}" != "yes" ] && exit 6
+
rm -f $LOCKFILE
+ echo -n $"Starting RPC gssd: "

- echo -n $"Starting RPC gssd: "
+ # List of kernel modules to load
+ [ -z "${SECURE_NFS_MODS}" ] && SECURE_NFS_MODS="des rpcsec_gss_krb5"

# Make sure the rpc_pipefs filesystem is available
[ "${RPCMTAB}" != "noload" ] && {
dovecot-1.0.7-2.el5.i386.rpm: /etc/rc.d/init.d/dovecot
---
+++
@@ -7,27 +7,61 @@
# chkconfig: - 65 35
# description: Dovecot Imap Server
# processname: dovecot
+# config: /etc/dovecot.conf
+# config: /etc/sysconfig/dovecot
+# pidfile: /var/run/dovecot/master.pid
+
+#### BEGIN INIT INFO
+# Provides: dovecot
+# Required-Start: $local_fs $network
+# Required-Stop: $local_fs $network
+# Should-Start: $remote_fs
+# Should-Stop: $remote_fs
+# Default-Start:
+# Default-Stop: 0 1 2 3 4 5 6
+# Short-Description: start and stop Dovecot Imap server
+# Description: Dovecot is an IMAP server for Linux/UNIX-like systems,
+#               written with security primarily in mind. It also contains
+#               a small POP3 server.
+#### END INIT INFO
+
# Source function library.
. /etc/init.d/functions

-test -x /usr/sbin/dovecot || exit 0
+if [ -f /etc/sysconfig/dovecot ]; then
+    . /etc/sysconfig/dovecot
+fi

RETVAL=0
prog="Dovecot Imap"
+exec="/usr/sbin/dovecot"

```

```

+config="/etc/dovecot.conf"
+pidfile="/var/run/dovecot/master.pid"
+lockfile="/var/lock/subsys/dovecot"

start() {
+ [ -x $exec ] || exit 5
+ [ -f $config ] || exit 6
+
    echo -n $"Starting $prog: "
- daemon /usr/sbin/dovecot
+ daemon --pidfile $pidfile $exec $OPTIONS
    RETVAL=$?
- [ $RETVAL -eq 0 ] && touch /var/lock/subsys/dovecot
+ [ $RETVAL -eq 0 ] && touch $lockfile
    echo
}

stop() {
    echo -n $"Stopping $prog: "
- killproc /usr/sbin/dovecot
+ killproc -p $pidfile $exec
    RETVAL=$?
- [ $RETVAL -eq 0 ] && rm -f /var/lock/subsys/dovecot
+ [ $RETVAL -eq 0 ] && rm -f $lockfile
+ echo
+}
+
+reload() {
+ echo -n $"Reloading $prog: "
+ killproc -p $pidfile $exec -HUP
+ RETVAL=$?
+ echo
+}

@@ -41,24 +75,27 @@
    stop)
    stop
    ;;
- reload|restart)
+ reload)
+ reload
+ ;;
+ force-reload|restart)
    stop
    start
    RETVAL=$?
    ;;
- condrestart)
- if [ -f /var/lock/subsys/dovecot ]; then
+ condrestart|try-restart)
+ if [ -f $lockfile ]; then
        stop
        start
    fi
    ;;
    status)
- status /usr/sbin/dovecot
+ status -p $pidfile $exec
    RETVAL=$?
    ;;

```

```

*)
- echo $"Usage: $0 {condrestart|start|stop|restart|reload|status}"
- exit 1
+ echo $"Usage: $0 {condrestart|try-restart|start|stop|restart|reload|force-
reload|status}"
+ exit 2
esac

exit $RETVAL
device-mapper-multipath-0.4.7-17.el5.i386.rpm: /etc/rc.d/init.d/multipathd
---
+++
@@ -4,7 +4,7 @@
#
# Starts the multipath daemon
#
-# chkconfig: - 13 87
+# chkconfig: - 06 87
# description: Manage device-mapper multipath devices
# processname: multipathd

@@ -13,6 +13,7 @@
initdir=/etc/rc.d/init.d
lockdir=/var/lock/subsys
sysconfig=/etc/sysconfig
+syspath=/sys/block

system=redhat
@@ -25,6 +26,35 @@
test -r $sysconfig/$prog && . $sysconfig/$prog

RETVAL=0
+
+teardown_slaves()
+{
+cd $1;
+if [ -d "slaves" ]; then
+for slave in slaves/*;
+do
+ if [ "$slave" = "slaves/*" ]; then
+ read dev < $1/dev
+ tablename=`dmsetup table --target multipath | sed -n "s/\(.*\)": .* $dev
+.*\/\1/p"`
+ if ! [ -z $tablename ]; then
+ echo "Root is on a multipathed device, multipathd can not be stopped"
+ exit 1
+ fi
+ else
+ local_slave=`readlink -f $slave`;
+ teardown_slaves $local_slave;
+ fi
+ done
+
+else
+ read dev < $1/dev
+ tablename=`dmsetup table --target multipath | sed -n "s/\(.*\)": .* $dev
+.*\/\1/p"`
+ if ! [ -z $tablename ]; then
+ echo "Root is on a multipathed device, multipathd can not be stopped"

```

```

+   exit 1
+   fi
+fi
+}

#
# See how we were called.
@@ -40,6 +70,11 @@
}

stop() {
+   root_dev=$(awk '{ if ($1 !~ /^[ \t]*#/ && $2 == "/") { print $1; } }'
/etc/mtab)
+   dm_num=`dmsetup info -c --noheadings -o minor $root_dev`
+   root_dm_device="dm-$dm_num"
+   [ -d $syspath/$root_dm_device ] && teardown_slaves $syspath/$root_dm_device
+
   echo -n "$Stopping $prog daemon: "
   killproc $DAEMON
   RETVAL=$?
initscripts-8.45.19.EL-1.i386.rpm: /etc/rc.d/rc6.d/S01reboot
---
+++
@@ -10,6 +10,9 @@

   NOLOCALE=1
   . /etc/init.d/functions
+
+UMOUNT="umount"
+[ ! -w /etc ] && UMOUNT="umount -n"

   action() {
       echo -n "$1 "
@@ -131,7 +134,7 @@
   # Try to unmount tmpfs filesystems to avoid swapping them in. Ignore failures.
   tmpfs=$(awk '$2 ~ /^\/($|proc|dev)/ { next; }
       $3 == "tmpfs" { print $2; }' /proc/mounts | sort -r)
   -[ -n "$tmpfs" ] && fstab-decode umount $tmpfs 2>/dev/null
   +[ -n "$tmpfs" ] && fstab-decode $UMOUNT $tmpfs 2>/dev/null

   # Turn off swap, then unmount file systems.
   [ -f /proc/swaps ] && SWAPS=`awk '! /^Filename/ { print $1 }' /proc/swaps`
@@ -143,8 +146,6 @@
       backdev=$(/sbin/cryptsetup status "$dst" \
| awk '$1 == "device:" { print $2 }')
       /sbin/cryptsetup remove "$dst"
   -   # Leave partition with a blank plain-text swap
   -   mkswap "$backdev" > /dev/null
   fi
   done
   fi
@@ -170,7 +171,7 @@
   "$Unmounting file systems (retry): " \
   -f

   -[ -f /proc/bus/usb/devices ] && umount /proc/bus/usb
   +[ -f /proc/bus/usb/devices ] && $UMOUNT /proc/bus/usb

   [ -f /etc/crypttab ] && \
       LANG=C action "$Stopping disk encryption: " halt_crypto

```

```

@@ -183,7 +184,7 @@
awk '$2 !~ /\(|dev|proc|selinux)$/ && $1 !~ /\^\/dev\/ram/ { print $2 }' \
/proc/mounts | sort -r | \
while read line; do
-   fstab-decode umount -f $line
+   fstab-decode $UMOUNT -f $line
done

if [ -x /sbin/halt.local ]; then
alsa-lib-1.0.14-1.rc4.el5.i386.rpm: /etc/alsa/alsa.conf
---
+++
@@ -67,7 +67,7 @@
defaults.pcm.ipc_perm 0600
defaults.pcm.dmix.max_periods 0
defaults.pcm.dmix.rate 48000
-defaults.pcm.dmix.format S16_LE
+defaults.pcm.dmix.format "unchanged"
defaults.pcm.dmix.card defaults.pcm.card
defaults.pcm.dmix.device defaults.pcm.device
defaults.pcm.dsnoop.card defaults.pcm.card
@@ -94,6 +94,9 @@
defaults.pcm.iec958.device defaults.pcm.device
defaults.pcm.modem.card defaults.pcm.card
defaults.pcm.modem.device defaults.pcm.device
+# truncate files via file or tee PCM
+defaults.pcm.file_format "raw"
+defaults.pcm.file_truncate true
defaults.rawmidi.card 0
defaults.rawmidi.device 0
defaults.rawmidi.subdevice -1
@@ -124,6 +127,7 @@
pcm.surround71 cards.pcm.surround71
pcm.iec958 cards.pcm.iec958
pcm.spdif iec958
+pcm.hdmi cards.pcm.hdmi
pcm.dmix cards.pcm.dmix
pcm.dsnoop cards.pcm.dsnoop
pcm.modem cards.pcm.modem
@@ -262,12 +266,19 @@
}
@args.FORMAT {
type string
- default raw
+ default {
+ @func refer
+ name defaults.pcm.file_format
+ }
}
type file
slave.pcm $SLAVE
file $FILE
format $FORMAT
+ truncate {
+ @func refer
+ name defaults.pcm.file_truncate
+ }
}

pcm.file {

```

```

@@ -277,12 +288,19 @@
    }
    @args.FORMAT {
        type string
    -   default raw
    +   default {
    +       @func refer
    +       name defaults.pcm.file_format
    +   }
    }
    type file
    slave.pcm null
    file $FILE
    format $FORMAT
    + truncate {
    +   @func refer
    +   name defaults.pcm.file_truncate
    + }
    }

    pcm.null {
@@ -316,7 +334,7 @@
    }

    ctl.hw {
    - @args[ CARD ]
    + @args [ CARD ]
        @args.CARD {
            type string
            default {
caching-nameserver-9.3.4-6.P1.el5.i386.rpm: /etc/named.caching-nameserver.conf
---
+++
@@ -18,8 +18,12 @@
    dump-file "/var/named/data/cache_dump.db";
        statistics-file "/var/named/data/named_stats.txt";
        memstatistics-file "/var/named/data/named_mem_stats.txt";
    - query-source      port 53;
    - query-source-v6   port 53;
    +
    + // Those options should be used carefully because they disable port
    + // randomization
    + // query-source      port 53;
    + // query-source-v6   port 53;
    +
    allow-query      { localhost; };
    };
    logging {
kexec-tools-1.102pre-21.el5.i386.rpm: /etc/rc.d/init.d/kdump
---
+++
@@ -26,6 +26,7 @@
    KDUMP_KERNELVER=""
    KDUMP_INITRDEXT=""
    KDUMP_COMMANDLINE=""
+KDUMP_IDE_NOPROBE_COMMANDLINE=""
    KEXEC_ARGS=""
    KDUMP_CONFIG_FILE="/etc/kdump.conf"

@@ -107,8 +108,15 @@

```



```

#check to see if config file or kdump post has been modified
#since last build of the image file
image_time=`stat -c "%Y" $kdump_initrd`
- KDUMP_POST=`grep ^kdump_post $KDUMP_CONFIG_FILE | cut -d\ -f2`
- files="$KDUMP_CONFIG_FILE $kdump_kernel $KDUMP_POST"
+ EXTRA_FILES=`grep ^kdump_post $KDUMP_CONFIG_FILE | cut -d\ -f2`
+ CHECK_FILE=`grep ^kdump_pre $KDUMP_CONFIG_FILE | cut -d\ -f2`
+ EXTRA_FILES="$EXTRA_FILES $CHECK_FILE"
+ CHECK_FILE=`grep ^extra_modules $KDUMP_CONFIG_FILE | cut -d\ -f2`
+ EXTRA_FILES="$EXTRA_FILES $CHECK_FILE"
+ CHECK_FILE=`grep ^extra_bins $KDUMP_CONFIG_FILE | cut -d\ -f2`
+ EXTRA_FILES="$EXTRA_FILES $CHECK_FILE"
+ FORCE_REBUILD=`grep ^extra_modules $KDUMP_CONFIG_FILE`
+ files="$KDUMP_CONFIG_FILE $kdump_kernel $EXTRA_FILES"
  modified_files=""
  for file in $files; do
    time_stamp=0
@@ -123,9 +131,17 @@
    fi
  done

- if [ -n "$modified_files" -a "$modified_files" != " " ]; then
-   echo "Detected change(s) the following file(s):"
-   echo -n " "; echo "$modified_files" | sed 's/\s/\n /g'
+ if [ -n "$FORCE_REBUILD" -a "$modified_files" != " " ]
+ then
+   modified_files="force_rebuild"
+ fi
+
+ if [ -n "$modified_files" -a "$modified_files" != " " ]; then
+   if [ "$modified_files" != "force_rebuild" ]
+   then
+     echo "Detected change(s) the following file(s):"
+     echo -n " "; echo "$modified_files" | sed 's/\s/\n /g'
+   fi
+   echo "Rebuilding $kdump_initrd"
+   /sbin/mkdumprd -d -f $kdump_initrd $kdump_kver
+   if [ $? != 0 ]; then
@@ -174,6 +190,33 @@
    return 1
  fi
  return 0
+}
+
+function avoid_cdrom_drive()
+{
+  local DRIVE=""
+  local MEDIA=""
+  local IDE_DRIVES=(`echo hd{a,b,c,d}`)
+  local COUNTER="0"
+
+  for DRIVE in ${IDE_DRIVES[@]}
+  do
+    if ! $(echo "$KDUMP_COMMANDLINE" |grep -q "$DRIVE=");then
+    if [ -f /proc/ide/$DRIVE/media ];then
+      MEDIA=$(cat /proc/ide/$DRIVE/media)
+      if [ x"$MEDIA" == x"cdrom" ]; then
+        KDUMP_IDE_NOPROBE_COMMANDLINE="$KDUMP_IDE_NOPROBE_COMMANDLINE
$DRIVE=cdrom"
+        COUNTER=$((COUNTER+1))

```

```

+   fi
+   fi
+   else
+       KDUMP_IDE_NOPROBE_COMMANDLINE="$KDUMP_IDE_NOPROBE_COMMANDLINE
$DRIVE=noprobe"
+   fi
+ done
+ # We don't find cdrom drive.
+ if [ $COUNTER -eq 0 ]; then
+     KDUMP_IDE_NOPROBE_COMMANDLINE=""
+ fi
+ fi
}

# Load the kdump kernel specified in /etc/sysconfig/kdump
@@ -226,6 +269,8 @@

    KDUMP_COMMANDLINE=`echo $KDUMP_COMMANDLINE | sed -e 's/crashkernel=[0-
9]\+[MmKkGg]@[0-9]\+[MmGgKk]//'\`
    KDUMP_COMMANDLINE="{KDUMP_COMMANDLINE} ${KDUMP_COMMANDLINE_APPEND}"
+ avoid_cdrom_drive
+ KDUMP_COMMANDLINE="{KDUMP_COMMANDLINE} ${KDUMP_IDE_NOPROBE_COMMANDLINE}"

    KEXEC_OUTPUT=`$KEXEC $KEXEC_ARGS $standard_kexec_args \
--command-line="$KDUMP_COMMANDLINE" \
@@ -364,13 +409,7 @@

function do_final_action()
{
- FINAL_ACTION=`grep default $KDUMP_CONFIG_FILE | grep -vm1 ^\# \
- | cut -d\ -f2`
- if [[ $FINAL_ACTION != "halt" ]]; then
-     FINAL_ACTION="reboot"
- fi
-
- $FINAL_ACTION
+ reboot
}

case "$1" in
initscripts-8.45.19.EL-1.i386.rpm: /etc/rc.d/init.d/network
---
+++
@@ -171,7 +171,7 @@
stop)
# Don't shut the network down if root is on NFS or a network
# block device.
-     rootfs=$(awk '{ if ($1 !~ /^[ \t]*#/ && $2 == "/") { print $3; } }'
/etc/mtab)
+     rootfs=$(awk '{ if ($1 !~ /^[ \t]*#/ && $2 == "/" && $3 != "rootfs") {
print $3; } }' /proc/mounts)
+     rootopts=$(awk '{ if ($1 !~ /^[ \t]*#/ && $2 == "/") { print $4; } }'
/etc/mtab)

    if [[ "$rootfs" =~ "^nfs" ]] || [[ "$rootopts" =~ "_netdev|_rnetdev" ]] ; then
nfs-utils-1.0.9-33.el5.i386.rpm: /etc/rc.d/init.d/rpcidmapd
---
+++
@@ -24,7 +24,7 @@
case "$1" in
start|condstart)

```

```

# Check that networking is up.
- [ "${NETWORKING}" = "no" ] && exit 6
+ [ "${NETWORKING}" != "yes" ] && exit 6

[ ! -x /usr/sbin/rpc.idmapd ] && exit 5

@@ -32,6 +32,11 @@
[ "$1" = "condstart" -a -n "`pidofproc $prog`" ] && {
    killproc $prog "-SIGHUP" > /dev/null
    exit 0
+ }
+ [ "$1" = "start" ] && {
+ if status $prog > /dev/null ; then
+     exit 0
+ fi
+ }
rm -f $LOCKFILE

@@ -55,8 +60,6 @@
    }
}
-
- # Make sure the mount worked.

# Start daemon.
daemon $prog ${RPCIDMAPDARGS}
initscripts-8.45.19.EL-1.i386.rpm: /etc/sysconfig/network-scripts/ifup-sl
---
+++
@@ -31,7 +31,7 @@
[ -x /usr/sbin/dip ] || {
    echo $"/usr/sbin/dip does not exist or is not executable"
    echo $"ifup-sl for $DEVICE exiting"
- logger -p daemon.info -t ifup-sl \
+ /usr/bin/logger -p daemon.info -t ifup-sl \
    $"/usr/sbin/dip does not exist or is not executable for $DEVICE"
    exit 1
}
@@ -43,14 +43,14 @@
[ -f $DIPSCRIPT ] || {
    echo $"/etc/sysconfig/network-scripts/dip-$DEVICE does not exist"
    echo $"ifup-sl for $DEVICE exiting"
- logger -p daemon.info -t ifup-sl \
+ /usr/bin/logger -p daemon.info -t ifup-sl \
    $"/etc/sysconfig/network-scripts/dip-$DEVICE does not exist for $DEVICE"
    exit 1
}

while : ; do
    echo > /var/run/sl-$DEVICE.dev
- (logger -p daemon.info -t ifup-sl \
+ (/usr/bin/logger -p daemon.info -t ifup-sl \
    $"dip started for $DEVICE on $MODEMPORT at $LINESPEED" &)&
    doexec /usr/sbin/dip dip-$DEVICE $DIPSCRIPT
    if [ "$PERSIST" != "yes" -o ! -f /var/run/sl-$DEVICE.dev ] ; then
ypserv-2.19-3.i386.rpm: /var/yp/Makefile
---
+++
@@ -98,10 +98,18 @@

```

```

YPSERVERS = $(YPDIR)/ypservers # List of all NIS servers for a domain

target: Makefile
+ifeq ($(shell /bin/domainname), (none))
+ @echo "Domain name cannot be (none)"
+else
+ifeq ($(shell /bin/domainname), )
+ @echo "Domain name must be set"
+else
+ @test ! -d $(LOCALDOMAIN) && mkdir $(LOCALDOMAIN) ; \
+ cd $(LOCALDOMAIN) ; \
+ $(NOPUSH) || $(MAKE) -f ../Makefile ypservers; \
+ $(MAKE) -f ../Makefile all
+endif
+endif

# If you don't want some of these maps built, feel free to comment
# them out from this list.
initscripts-8.45.19.EL-1.i386.rpm: /etc/rc.d/init.d/netfs
---
+++
@@ -35,6 +35,8 @@
# See how we were called.
case "$1" in
start)
+ # Let udev handle any backlog before trying to mount file systems
+ /sbin/udevsettle --timeout=30
+ [ -n "$NFSSTAB" ] &&
+ {
+ [ ! -f /var/lock/subsys/portmap ] && service portmap start
nfs-utils-1.0.9-33.el5.i386.rpm: /etc/rc.d/init.d/rpcsvcgssd
---
+++
@@ -27,12 +27,9 @@
case "$1" in
start|condstart)
# Check that networking is up.
- [ "${NETWORKING}" = "no" ] && exit 6
+ [ "${NETWORKING}" != "yes" ] && exit 6
+ [ "${SECURE_NFS}" != "yes" ] && exit 6
+ [ ! -x /usr/sbin/rpc.svcgssd ] && exit 5
-
- # List of kernel modules to load
- [ -z "${SECURE_NFS_MODS}" ] && SECURE_NFS_MODS="des rpcsec_gss_krb5"

# Make sure the daemon is not already running.
if status $prog > /dev/null ; then
@@ -41,6 +38,9 @@
rm -f $LOCKFILE

echo -n "$Starting RPC svcgssd: "
+ # List of kernel modules to load
+ [ -z "${SECURE_NFS_MODS}" ] && SECURE_NFS_MODS="des rpcsec_gss_krb5"
+

# Make sure the rpc_pipefs filesystem is available
[ "${RPCMTAB}" != "noload" ] && {
openldap-servers-2.3.27-8.el5_1.3.i386.rpm: /etc/rc.d/init.d/ldap
---
+++

```

```

@@ -21,7 +21,7 @@

# Source an auxiliary options file if we have one, and pick up OPTIONS,
# SLAPD_OPTIONS, SLURPD_OPTIONS, SLAPD_LDAPS, SLAPD_LDAPI, and maybe
-# KRB5_KTNAME.
+# KRB5_KTNAME and SLURPD_KRB5CCNAME.
if [ -r /etc/sysconfig/ldap ] ; then
. /etc/sysconfig/ldap
fi
@@ -114,7 +114,7 @@
echo -n "$$file is not readable by \"$user\""; warning ; echo
fi
# Unaccessible TLS configuration files.
- tlsconfigs=`LANG=C egrep
'^ (TLSCACertificateFile|TLSCertificateFile|TLSCertificateKeyFile)[[:space:]]'
/etc/openldap/slapd.conf | awk '{print $2}'`
+ tlsconfigs=`LANG=C egrep
'^ (TLS_CACERT|TLSCACertificateFile|TLSCertificateFile|TLSCertificateKeyFile)[[:space:]]' /etc/openldap/slapd.conf /etc/openldap/ldap.conf | awk '{print $2}'`
for file in $tlsconfigs ; do
if ! testasuser $user -r $file ; then
echo -n "$$file is not readable by \"$user\""; warning ; echo
@@ -167,6 +167,9 @@
if grep -q "^replugfile" /etc/openldap/slapd.conf; then
prog=`basename ${slurpd}`
echo -n "Starting $prog: "
+ if [ -n "$SLURPD_KRB5CCNAME" ]; then
+ export KRB5CCNAME="$SLURPD_KRB5CCNAME";
+ fi
daemon ${slurpd} $OPTIONS $SLURPD_OPTIONS
RETVAL=$?
echo
initscripts-8.45.19.EL-1.i386.rpm: /etc/rc.d/rc.sysinit
---
+++
@@ -143,7 +143,7 @@
skip=""
# Parse the src field for UUID= and convert to real device names
if [ "${src%*=}" == "UUID" ]; then
- src=`/sbin/blkid -t "$src" -o device|(read oneline;echo $oneline)`
+ src=$(/sbin/blkid -t "$src" -l -o device)
elif [ "${src/^\/dev\/disk\/by-uuid\/}" != "$src" ]; then
src=$(__readlink $src)
fi
@@ -458,6 +458,13 @@
fi
fi

+if [ -f /etc/crypttab ]; then
+ s="Starting disk encryption:"
+ echo "$s"
+ init_crypto 0 && success "$s" || failure "$s"
+ echo
+fi
+
+if [ -f /fastboot ] || strstr "$cmdline" fastboot ; then
+ fastboot=yes
+fi
@@ -533,7 +540,7 @@
mountopts=

```

```

# Scan partitions for local scratch storage
- rw_mount_dev=$(blkid -t LABEL="$RW_LABEL" -o device | awk '{ print ; exit }')
+ rw_mount_dev=$(blkid -t LABEL="$RW_LABEL" -l -o device)

# First try to mount scratch storage from /etc/fstab, then any
# partition with the proper label. If either succeeds, be sure
@@ -590,12 +597,12 @@

# First try to mount persistent data from /etc/fstab, then any
# partition with the proper label, then fallback to NFS
- state_mount_dev=$(blkid -t LABEL="$STATE_LABEL" -o device | awk '{ print ; exit
}')
- if mount $mountopts "$STATE_MOUNT" > /dev/null 2>&1 ; then
+ state_mount_dev=$(blkid -t LABEL="$STATE_LABEL" -l -o device)
+ if mount $mountopts $STATE_OPTIONS "$STATE_MOUNT" > /dev/null 2>&1 ; then
    /bin/true
    elif [ x$state_mount_dev != x ] && mount $state_mount_dev $mountopts
"$STATE_MOUNT" > /dev/null 2>&1; then
    /bin/true
- elif [ -n "$CLIENTSTATE" ]; then
+ elif [ ! -z "$CLIENTSTATE" ]; then
    # No local storage was found. Make a final attempt to find
    # state on an NFS server.

@@ -730,23 +737,29 @@
    restorecon /etc/mtab /etc/ld.so.cache /etc/blkid/blkid.tab /etc/resolv.conf
>/dev/null 2>&1
fi

-# Clear mtab
-(> /etc/mtab) &> /dev/null
-
-# Remove stale backups
-rm -f /etc/mtab~ /etc/mtab~~
-
-# Enter mounted filesystems into /etc/mtab
-mount -f /
-mount -f /proc >/dev/null 2>&1
-mount -f /sys >/dev/null 2>&1
-mount -f /dev/pts >/dev/null 2>&1
-mount -f /proc/bus/usb >/dev/null 2>&1
+if [ "$READONLY" != "yes" ] ; then
+ # Clear mtab
+ (> /etc/mtab) &> /dev/null
+
+ # Remove stale backups
+ rm -f /etc/mtab~ /etc/mtab~~
+
+ # Enter mounted filesystems into /etc/mtab
+ mount -f /
+ mount -f /proc >/dev/null 2>&1
+ mount -f /sys >/dev/null 2>&1
+ mount -f /dev/pts >/dev/null 2>&1
+ mount -f /proc/bus/usb >/dev/null 2>&1
+fi

# Mount all other filesystems (except for NFS and /proc, which is already
# mounted). Contrary to standard usage,
# filesystems are NOT unmounted in single user mode.

```

```

-action $"Mounting local filesystems: " mount -a -t
nonfs,nfs4,smbfs,ncpfs,cifs,gfs -O no_netdev
+if [ "$READONLY" != "yes" ] ; then
+ action $"Mounting local filesystems: " mount -a -t
nonfs,nfs4,smbfs,ncpfs,cifs,gfs -O no_netdev
+else
+ action $"Mounting local filesystems: " mount -a -n -t nfs4,smbfs,ncpfs,cifs,gfs
-O no_netdev
+fi

    if [ -x /sbin/quotaon ]; then
        action $"Enabling local filesystem quotas: " /sbin/quotaon -aug
@@ -898,7 +911,7 @@
    action $"Enabling /etc/fstab swaps: " swapon -a -e
    if [ "$AUTOSWAP" = "yes" ]; then
        curswap=$(awk '/^\/dev/ { print $1 }' /proc/swaps | while read x; do
get_numeric_dev dec $x ; echo -n " "; done)
- swappartitions=`blkid -t TYPE=swap -o device`
+ swappartitions=$(blkid -t TYPE=swap -o device)
    if [ x"$swappartitions" != x ]; then
        for partition in $swappartitions ; do
            [ ! -e $partition ] && continue
initscripts-8.45.19.EL-1.i386.rpm: /etc/sysconfig/network-scripts/ifdown-sl
---
+++
@@ -35,7 +35,7 @@

    kill -KILL $PID > /dev/null 2>&1
    if [ -d /proc/$PID ]; then
-    logger -p daemon.info -t ifdown-ppp "ifdown-ppp unable to kill pppd-$DEVICE" &
+ /usr/bin/logger -p daemon.info -t ifdown-ppp "ifdown-ppp unable to kill pppd-
$DEVICE" &
    else
        /etc/sysconfig/network-scripts/ifdown-post $1
    fi
NetworkManager-0.6.4-8.el5.i386.rpm: /etc/rc.d/init.d/NetworkManager
---
+++
@@ -4,7 +4,7 @@
#
# chkconfig: - 98 02
# description: This is a daemon for automatically switching network \
-# connections to the best available connection. \
+# connections to the best available connection.
#
# processname: NetworkManager
# pidfile: /var/run/NetworkManager/NetworkManager.pid
@@ -19,11 +19,11 @@
# Sanity checks.
[ -x $NETWORKMANAGER_BIN ] || exit 1

-# We need /sbin/ip
-[ -x /sbin/ip ] || exit 1
-
# Source function library.
. /etc/rc.d/init.d/functions
+
+# Source network configuration
+. /etc/sysconfig/network

```

```

# so we can rearrange this easily
processname=NetworkManager
@@ -34,17 +34,23 @@

start()
{
- echo $"Setting network parameters... "
+ echo -n $"Setting network parameters... "
  sysctl -e -p /etc/sysctl.conf >/dev/null 2>&1
-
- if [ ! -e /var/lock/subsys/dhcdbd ]; then
-   service dhcdbd start
- fi
+ success
+ echo

  echo -n $"Starting NetworkManager daemon: "
- daemon --check $servicename $processname --pid-file=$pidfile
+ daemon --check $servicename $processname --pid-file=$pidfile --ppp-dns-
workaround
  RETVAL=$?
  echo
+ if [ -n "${NETWORKWAIT}" ]; then
+   [ -z "${LINKDELAY}" ] && LINKDELAY=10
+   echo -n $"Waiting for network..."
+   nm-online -q --timeout=$LINKDELAY || nm-online -q -x --timeout=30
+   [ "$?" = "0" ] && success "network startup" || failure "network startup"
+   echo
+   [ -n "${NETWORKDELAY}" ] && /bin/sleep ${NETWORKDELAY}
+ fi
  [ $RETVAL -eq 0 ] && touch /var/lock/subsys/$servicename
}

initscripts-8.45.19.EL-1.i386.rpm: /etc/sysconfig/network-scripts/network-
functions-ipv6
---
+++
@@ -138,14 +138,14 @@
;;
'syslog')
# note: logger resides in /usr/bin, but not used by default
- if ! [ -x logger ]; then
+ if ! [ -x /usr/bin/logger ]; then
  echo $"ERROR: [ipv6_log] Syslog is chosen, but binary 'logger' doesn't exist
or isn't executable" >/dev/stderr
  return 3
fi
if [ -z "$txt_name" ]; then
- logger -p $facility.$priority $message
+ /usr/bin/logger -p $facility.$priority $message
else
- logger -p $facility.$priority -t "$txt_name" "$message"
+ /usr/bin/logger -p $facility.$priority -t "$txt_name" "$message"
fi
;;
*)
nfs-utils-1.0.9-33.el5.i386.rpm: /etc/rc.d/init.d/nfs
---
+++
@@ -19,6 +19,9 @@

```



```

# Check for and source configuration file otherwise set defaults
[ -f /etc/sysconfig/nfs ] && . /etc/sysconfig/nfs

+# Remote quota server
+[ -z "$RQUOTAD" ] && RQUOTAD=`type -path rpc.rquotad`
+
RETVAL=0

# See how we were called.
@@ -26,11 +29,16 @@
    start)

    # Check that networking is up.
    - [ "${NETWORKING}" = "no" ] && exit 6
    + [ "${NETWORKING}" != "yes" ] && exit 6

    [ -x /usr/sbin/rpc.nfsd ] || exit 5
    [ -x /usr/sbin/rpc.mountd ] || exit 5
    [ -x /usr/sbin/exportfs ] || exit 5
    +
    + # Make sure the rpc.mountd is not already running.
    + if status rpc.mountd > /dev/null ; then
    +     exit 0
    + fi

    # Don't fail if /etc/exports doesn't exist; create a bare-bones
    # version and continue.
    @@ -42,9 +50,6 @@

    # Number of servers to be started by default
    [ -z "$RPCNFSDCOUNT" ] && RPCNFSDCOUNT=8
    -
    - # Remote quota server
    - [ -z "$RQUOTAD" ] && RQUOTAD=`type -path rpc.rquotad`

    # Start daemons.
    [ -x /usr/sbin/rpc.svcgssd ] && /sbin/service rpcsvcgssd start
    @@ -67,6 +72,12 @@
    RETVAL=$?
    echo
    fi
    +
    + # Load preload module so arguments to rpc.nfsd will take effect
    + [ -n "$RPCNFSDARGS" -a "$NFSD_MODULE" != "noload" ] && {
    +     [ -x /sbin/modprobe ] && /sbin/modprobe nfsd
    + }
    +
    echo -n "Starting NFS daemon: "
    daemon rpc.nfsd $RPCNFSDARGS $RPCNFSDCOUNT
    RETVAL=$?
initscripts-8.45.19.EL-1.i386.rpm: /etc/sysconfig/network-scripts/network-functions
---
+++
@@ -28,7 +28,7 @@

    get_config_by_subchannel ()
    {
    -     LANG=C grep -iL "^[[:space:]]*SUBCHANNELS=${1}\([[:space:]]#\|$\|,\|)"
    /etc/sysconfig/network-scripts/ifcfg-* \
    +     LANG=C egrep -i -L "^[[:space:]]*SUBCHANNELS=([0-9]\.[0-9]\.[a-f0-
```

```

9]+, ){0,2}${1}([0-9]\.[0-9]\.[a-f0-9]+){0,2}([[:space:]]+#[[:space:]]*${1})"
/etc/sysconfig/network-scripts/ifcfg-* \
| LC_ALL=C sed -e "$__sed_discard_ignored_files"
}

@@ -434,7 +434,7 @@
    (echo "$s" > /etc/resolv.conf;) >/dev/null 2>&1;
    r=$?
    if [ $r -eq 0 ]; then
- logger -p local7.notice -t "NET" -i "$0 : updated /etc/resolv.conf";
+ /usr/bin/logger -p local7.notice -t "NET" -i "$0 : updated /etc/resolv.conf";
    [ -e /var/lock/subsys/nscd ] && /usr/sbin/nscd -i hosts; # invalidate cache
    fi;
    return $r;
initscripts-8.45.19.EL-1.i386.rpm: /etc/rc.d/rc0.d/S01halt
---
+++
@@ -10,6 +10,9 @@

    NOLOCALE=1
    . /etc/init.d/functions
+
+UMOUNT="umount"
+[ ! -w /etc ] && UMOUNT="umount -n"

    action() {
        echo -n "$1 "
@@ -131,7 +134,7 @@
    # Try to unmount tmpfs filesystems to avoid swapping them in. Ignore failures.
    tmpfs=$(awk ' $2 ~ /^\/($|proc|dev)/ { next; }
        $3 == "tmpfs" { print $2; }' /proc/mounts | sort -r)
- [ -n "$tmpfs" ] && fstab-decode umount $tmpfs 2>/dev/null
+ [ -n "$tmpfs" ] && fstab-decode $UMOUNT $tmpfs 2>/dev/null

    # Turn off swap, then unmount file systems.
    [ -f /proc/swaps ] && SWAPS=`awk '! /^Filename/ { print $1 }' /proc/swaps`
@@ -143,8 +146,6 @@
    backdev=$(/sbin/cryptsetup status "$dst" \
| awk '$1 == "device:" { print $2 }')
    /sbin/cryptsetup remove "$dst"
- # Leave partition with a blank plain-text swap
- mkswap "$backdev" > /dev/null
    fi
done
fi
@@ -170,7 +171,7 @@
    "$Unmounting file systems (retry): " \
    -f

- [ -f /proc/bus/usb/devices ] && umount /proc/bus/usb
+ [ -f /proc/bus/usb/devices ] && $UMOUNT /proc/bus/usb

    [ -f /etc/crypttab ] && \
        LANG=C action "$Stopping disk encryption: " halt_crypto
@@ -183,7 +184,7 @@
    awk ' $2 !~ /^\/($|dev|proc|selinux)$/ && $1 !~ /^\/dev\/ram/ { print $2 }' \
        /proc/mounts | sort -r | \
    while read line; do
-     fstab-decode umount -f $line
+     fstab-decode $UMOUNT -f $line

```

```

done

if [ -x /sbin/halt.local ]; then
initscripts-8.45.19.EL-1.i386.rpm: /etc/rc.d/init.d/halt
---
+++
@@ -10,6 +10,9 @@

    NOLOCALE=1
    . /etc/init.d/functions
+
+UMOUNT="umount"
+[ ! -w /etc ] && UMOUNT="umount -n"

    action() {
        echo -n "$1 "
@@ -131,7 +134,7 @@
    # Try to unmount tmpfs filesystems to avoid swapping them in. Ignore failures.
    tmpfs=$(awk ' $2 ~ /^\/($|proc|dev)/ { next; }
        $3 == "tmpfs" { print $2; }' /proc/mounts | sort -r)
    -[ -n "$tmpfs" ] && fstab-decode umount $tmpfs 2>/dev/null
    +[ -n "$tmpfs" ] && fstab-decode $UMOUNT $tmpfs 2>/dev/null

    # Turn off swap, then unmount file systems.
    [ -f /proc/swaps ] && SWAPS=`awk '! /^Filename/ { print $1 }' /proc/swaps`
@@ -143,8 +146,6 @@
        backdev=$(/sbin/cryptsetup status "$dst" \
            | awk ' $1 == "device:" { print $2 }')
        /sbin/cryptsetup remove "$dst"
    -    # Leave partition with a blank plain-text swap
    -    mkswap "$backdev" > /dev/null
    fi
done
fi
@@ -170,7 +171,7 @@
    $"Unmounting file systems (retry): " \
    -f

    -[ -f /proc/bus/usb/devices ] && umount /proc/bus/usb
    +[ -f /proc/bus/usb/devices ] && $UMOUNT /proc/bus/usb

    [ -f /etc/crypttab ] && \
        LANG=C action $"Stopping disk encryption: " halt_crypto
@@ -183,7 +184,7 @@
    awk ' $2 !~ /\\/(|dev|proc|selinux)$/ && $1 !~ /\^\/dev\/ram/ { print $2 }' \
        /proc/mounts | sort -r | \
        while read line; do
    -    fstab-decode umount -f $line
    +    fstab-decode $UMOUNT -f $line
done

if [ -x /sbin/halt.local ]; then
nfs-utils-1.0.9-33.el5.i386.rpm: /etc/rc.d/init.d/nfslock
---
+++
@@ -33,7 +33,7 @@
    RETVAL=0
    start() {
        # Check that networking is up.
    - [ "${NETWORKING}" = "no" ] && exit 6

```

```

+ [ "${NETWORKING}" != "yes" ] && exit 6

    if [ "$USERLAND_LOCKD" ] ; then
        [ -x /sbin/rpc.lockd ] || exit 5
@@ -46,9 +46,12 @@
        STATDARG=""
    fi

- if [ -f /var/lock/subsys/nfslock ]; then
-     return $RETVAL
+ # Make sure the rpc.statd is not already running.
+ if status rpc.statd > /dev/null ; then
+     exit 0
+ fi
+ rm -f /var/lock/subsys/nfslock
+
    # Start daemons.
    if [ "$USERLAND_LOCKD" ]; then
        echo -n "Starting NFS locking: "
@@ -64,10 +67,14 @@
        /sbin/sysctl -w fs.nfs.nlm_udpport=$LOCKD_UDPPORT >/dev/null 2>&1
    fi
    echo -n "Starting NFS statd: "
+ # Set statd's local hostname if defined
+ [ -n "${STATD_HOSTNAME}" ] && STATDARG="$STATDARG -n ${STATD_HOSTNAME}"
+
    # See if a statd's ports has been defined
    [ -n "$STATD_PORT" ] && STATDARG="$STATDARG -p $STATD_PORT"
    [ -n "$STATD_OUTGOING_PORT" ] \
        && STATDARG="$STATDARG -o $STATD_OUTGOING_PORT"
+
    # See if we have an HA-callout program specified
    [ -n "$STATD_HA_CALLOUT" ] \
        && STATDARG="$STATDARG -H $STATD_HA_CALLOUT"
@@ -91,6 +98,7 @@
    RETVAL=$?
    echo
    rm -f /var/lock/subsys/nfslock
+ rm -f /var/run/sm-notify.pid
    return $RETVAL
}

dbus-1.0.0-7.el5.i386.rpm: /etc/dbus-1/system.conf
---
+++
@@ -15,10 +15,16 @@
    <type>system</type>

    <!-- Run as special user -->
-   <user>81</user>
+   <user>dbus</user>

    <!-- Fork into daemon mode -->
    <fork/>
+
+   <!-- We use system service launching using a helper -->
+   <standard_system_servicedirs/>
+
+   <!-- This is a setuid helper that is used to launch system services -->
+   <servicehelper>/lib/dbus-1/dbus-daemon-launch-helper</servicehelper>

```

```

    <!-- Write a pid file -->
    <pidfile>/var/run/messagebus.pid</pidfile>
initscripts-8.45.19.EL-1.i386.rpm: /etc/sysconfig/network-scripts/ifup-eth
---
+++
@@ -105,9 +105,10 @@

# slave device?
if [ "${SLAVE}" = yes -a "${ISALIAS}" = no -a "${MASTER}" != "" ]; then
-   /sbin/ip link set dev ${DEVICE} down
-   echo "+${DEVICE}" > /sys/class/net/${MASTER}/bonding/slaves 2>/dev/null
+
+   grep -wq "${DEVICE}" /sys/class/net/${MASTER}/bonding/slaves || {
+ /sbin/ip link set dev ${DEVICE} down
+ echo "+${DEVICE}" > /sys/class/net/${MASTER}/bonding/slaves 2>/dev/null
+   }
    if [ -n "$ETHTOOL_OPTS" ] ; then
        /sbin/ethtool -s ${REALDEVICE} $ETHTOOL_OPTS
    fi
@@ -125,7 +126,7 @@
    for arg in $BONDING_OPTS ; do
        key=${arg%*=*};
        value=${arg##*=*};
-       if [ "${key}" = "arp_ip_target" ]; then
+       if [ "${key}" = "arp_ip_target" -a "${value:0:1}" != "+" ]; then
            OLDIFS=$IFS;
            IFS=' ';
            for arp_ip in $value; do
initscripts-8.45.19.EL-1.i386.rpm: /etc/sysconfig/network-scripts/ifup-ppp
---
+++
@@ -44,7 +44,7 @@
[ -x /sbin/pppd -o -x /usr/sbin/pppd ] || {
    echo "$pppd does not exist or is not executable"
    echo "ifup-ppp for ${DEVICE} exiting"
-   logger -p daemon.info -t ifup-ppp \
+   /usr/bin/logger -p daemon.info -t ifup-ppp \
        "$pppd does not exist or is not executable for ${DEVICE}"
    exit 1
}
@@ -55,7 +55,7 @@
    adsl-start /etc/sysconfig/network-scripts/$CONFIG
    exit $?
else
-   logger -p daemon.info -t ifup-ppp \
+   /usr/bin/logger -p daemon.info -t ifup-ppp \
        "$adsl-start does not exist or is not executable for ${DEVICE}"
    exit 1
fi
@@ -76,12 +76,12 @@
[ -f ${CHATSCRIPT} ] || {
    echo "$/etc/sysconfig/network-scripts/chat-${DEVNAME} does not exist"
    echo "ifup-ppp for ${DEVNAME} exiting"
-   logger -p daemon.info -t ifup-ppp \
+   /usr/bin/logger -p daemon.info -t ifup-ppp \
        "$/etc/sysconfig/network-scripts/chat-${DEVNAME} does not exist for
${DEVICE}"
    exit 1
}

```

```

    fi
-   logger -s -p daemon.notice -t ifup-ppp \
+   /usr/bin/logger -s -p daemon.notice -t ifup-ppp \
    "$Setting up a new ${PEERCONF} config file"
    if [ -f /etc/ppp/peers/${DEVICE} ]; then
        cp -f /etc/ppp/peers/${DEVICE} ${PEERCONF}
@@ -141,7 +141,7 @@
    exec=exec
    fi

-(logger -p daemon.info -t ifup-ppp \
+(/usr/bin/logger -p daemon.info -t ifup-ppp \
    "$pppd started for ${DEVNAME} on ${MODEMPORT} at ${LINESPEED}" &)&

    $exec pppd $opts ${MODEMPORT} ${LINESPEED} \
tog-pegasus-2.7.0-2.el5.i386.rpm: /etc/rc.d/init.d/tog-pegasus
---
+++
@@ -8,6 +8,8 @@
    CIMSERVER_BIN=/usr/sbin/cimserver
    prog=cimserver
    LOCKFILE=/var/lock/subsys/tog-pegasus
+LOCKFILE2=/var/run/tog-pegasus/cimserver_start.lock
+PIDFILE=/var/run/tog-pegasus/cimserver.pid
. /etc/rc.d/init.d/functions

[ -e /etc/sysconfig/tog-pegasus ] && . /etc/sysconfig/tog-pegasus;
@@ -75,6 +77,7 @@
    success;
    else
        failure;
+    RETVAL=7
    fi
    echo
;;
@@ -86,8 +89,16 @@
    echo -n "CIM server ($pid) is running";
    RETVAL=0
    else
-    echo -n "CIM server is not running";
-    RETVAL=3
+    if [ -e $PIDFILE ]; then
+        echo -n "CIM server is not running and pid file exists";
+        RETVAL=1
+    elif [ -e $LOCKFILE ] || [ -e $LOCKFILE2 ]; then
+        echo -n "CIM server is not running and lock file exists";
+        RETVAL=2
+    else
+        echo -n "CIM server is not running";
+        RETVAL=3
+    fi
    fi
    echo
;;
udev-095-14.16.el5.i386.rpm: /etc/udev/rules.d/50-udev.rules
---
+++
@@ -174,7 +174,7 @@
    KERNEL=="mice",    NAME="input/%k"
    KERNEL=="mouse*",  NAME="input/%k"

```

```

-KERNEL=="event*", SYSFS{idVendor}=="03f0", SYSFS{device/interface}=="Virtual
Mouse", SYSFS{device/bInterfaceProtocol}=="02", NAME="input/%k",
SYMLINK+="input/hp_ilo_mouse"
+KERNEL=="event*", SYSFS{idVendor}=="03f0", SYSFS{device/interface}=="Virtual
Mouse", SYSFS{device/bInterfaceProtocol}=="02", SYMLINK+="input/hp_ilo_mouse"

    KERNEL=="event*", NAME="input/%k"
    KERNEL=="js*", NAME="input/%k", SYMLINK+="%k"
@@ -220,13 +220,6 @@
    KERNEL=="pcd[0-9]*", SYMLINK+="cdrom cdrom-%k"
    KERNEL=="fd[0-9]*", SYMLINK+="floppy floppy-%k"

-# Section for zaptel device
-KERNEL=="zapctl", NAME="zap/ctl"
-KERNEL=="zaptimer", NAME="zap/timer"
-KERNEL=="zapchannel", NAME="zap/channel"
-KERNEL=="zappseudo", NAME="zap/pseudo"
-KERNEL=="zap[0-9]*", NAME="zap/%n"
-
    KERNEL=="pktdvd", NAME="%k/control"

    KERNEL=="hd[a-z]", BUS=="ide", SYSFS{removable}=="1", \
@@ -291,12 +284,14 @@
    KERNEL=="sd* [!0-9]|sr*", ENV{ID_SERIAL}=="", IMPORT{program}="/lib/udev/scsi_id
-g -x -a -s %p -d $tempnode"
    KERNEL=="dasd* [!0-9]", IMPORT{program}="/lib/udev/dasd_id --export $tempnode"
    KERNEL=="nst[0-9]*|st*|sd* [!0-9]|sr*|dasd* [!0-9]|cciss?c", ENV{ID_SERIAL}=="?",
SYMLINK+="disk/by-id/$env{ID_BUS}-$env{ID_SERIAL}"
+KERNEL=="nst[0-9]*|st*|sd* [!0-9]|sr*|dasd* [!0-9]|cciss?c", ENV{ID_UID}=="?",
SYMLINK+="disk/by-id/$env{ID_BUS}-$env{ID_UID}"

# for partitions import parent information
KERNEL=="sd*[0-9]|dasd*[0-9]", IMPORT{parent}=="ID_*"
KERNEL=="cciss?c[0-9]d[0-9]", ENV{ID_SERIAL}!="?", IMPORT{program}="scsi_id -g
-x -s %p -d $tempnode", ENV{ID_BUS}="cciss"
    KERNEL=="cciss?c[0-9]d[0-9]", ENV{ID_SERIAL}!="?", IMPORT{program}="scsi_id -g
-x -a -s %p -d $tempnode", ENV{ID_BUS}="cciss"
    KERNEL=="sd*[0-9]|dasd*[0-9]|cciss*p[0-9]", ENV{ID_SERIAL}=="?",
SYMLINK+="disk/by-id/$env{ID_BUS}-$env{ID_SERIAL}-part%n"
+KERNEL=="sd*[0-9]|dasd*[0-9]|cciss*p[0-9]", ENV{ID_UID}=="?",
SYMLINK+="disk/by-id/$env{ID_BUS}-$env{ID_UID}-part%n"

# by-path (shortest physical path)
KERNEL=="* [!0-9]|sr*", ENV{ID_TYPE}=="?", IMPORT{program}="/lib/udev/path_id
%p", SYMLINK+="disk/by-path/$env{ID_PATH}"
dbus-1.0.0-7.el5.i386.rpm: /etc/dbus-1/session.conf
---
+++
@@ -14,12 +14,16 @@

    <policy context="default">
        <!-- Allow everything to be sent -->
-        <allow send_destination=""/>
+        <allow send_destination="" eavesdrop="true"/>
        <!-- Allow everything to be received -->
        <allow eavesdrop="true"/>
        <!-- Allow anyone to own anything -->
        <allow own=""/>
    </policy>

```

```

+
+ <!-- Config files are placed here that among other things,
+      further restrict the above policy for specific services. -->
+ <includedir>session.d</includedir>
+
+ <!-- This is included last so local configuration can override what's
+      in this standard file -->
@@ -27,4 +31,27 @@
+
+ <include if_selinux_enabled="yes"
selinux_root_relative="yes">contexts/dbus_contexts</include>
+
+ <!-- For the session bus, override the default relatively-low limits
+      with essentially infinite limits, since the bus is just running
+      as the user anyway, using up bus resources is not something we need
+      to worry about. In some cases, we do set the limits lower than
+      "all available memory" if exceeding the limit is almost certainly a bug,
+      having the bus enforce a limit is nicer than a huge memory leak. But the
+      intent is that these limits should never be hit. -->
+
+ <!-- the memory limits are 1G instead of say 4G because they can't exceed 32-
bit signed int max -->
+ <limit name="max_incoming_bytes">1000000000</limit>
+ <limit name="max_outgoing_bytes">1000000000</limit>
+ <limit name="max_message_size">1000000000</limit>
+ <limit name="service_start_timeout">120000</limit>
+ <limit name="auth_timeout">240000</limit>
+ <limit name="max_completed_connections">100000</limit>
+ <limit name="max_incomplete_connections">10000</limit>
+ <limit name="max_connections_per_user">100000</limit>
+ <limit name="max_pending_service_starts">10000</limit>
+ <limit name="max_names_per_connection">50000</limit>
+ <limit name="max_match_rules_per_connection">50000</limit>
+ <limit name="max_replies_per_connection">50000</limit>
+ <limit name="reply_timeout">300000</limit>
+
</busconfig>

```



## A. Revision History

<b>Revision 2.1-0.400</b>	<b>2013-10-31</b>	<b>Rüdiger Landmann</b>
Rebuild with publican 4.0.0		
<b>Revision 2.1-0</b>	<b>Wed Jan 21 2009</b>	<b>Ryan Lerch</b>
Removed <i>iSCSI target capability</i> note from Technology Previews section. This feature is fully supported. For more details on this newly supported feature, refer to the Feature Updates Section of this document.		